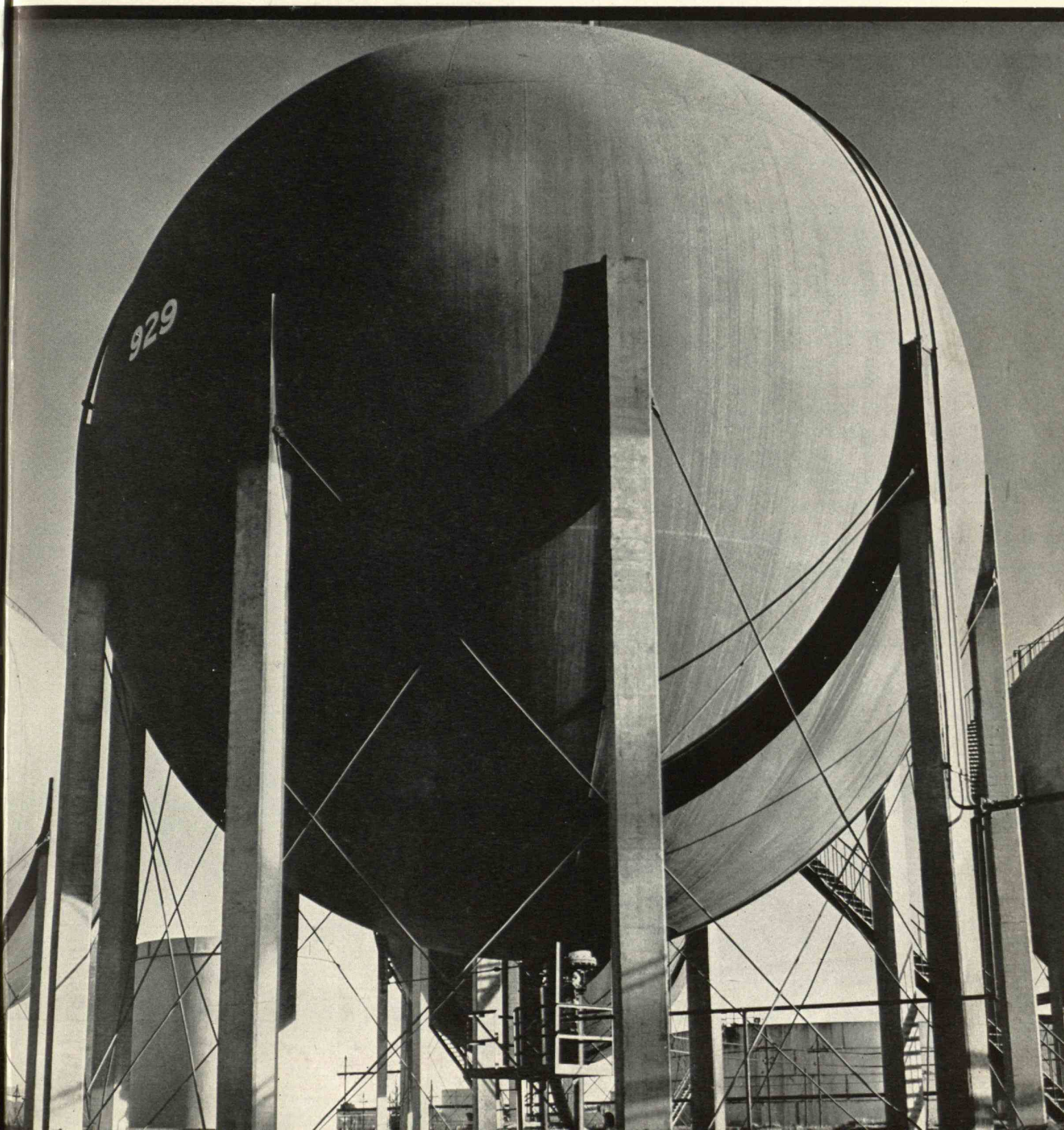
July 1945

TECHNOLOGY REVIEW

Title Reg. in U. S. Pat. Office



technology
review
Published by MIT

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FINE QUALITY HARDWARE

Your Own Line... Custom Forged



THE HARVEY METAL CORPORATION

HAROLD B. HARVEY '05 • *Engineers & Manufacturers* • SHERRY O'BRIEN '17

74th STREET and ASHLAND AVENUE • CHICAGO 36, ILLINOIS

FORGINGS IN ALUMINUM • BRASS • BRONZE • COPPER • MAGNESIUM • MONEL • ALLOYS

MACHINING FACILITIES

This Pair of AO Goggles

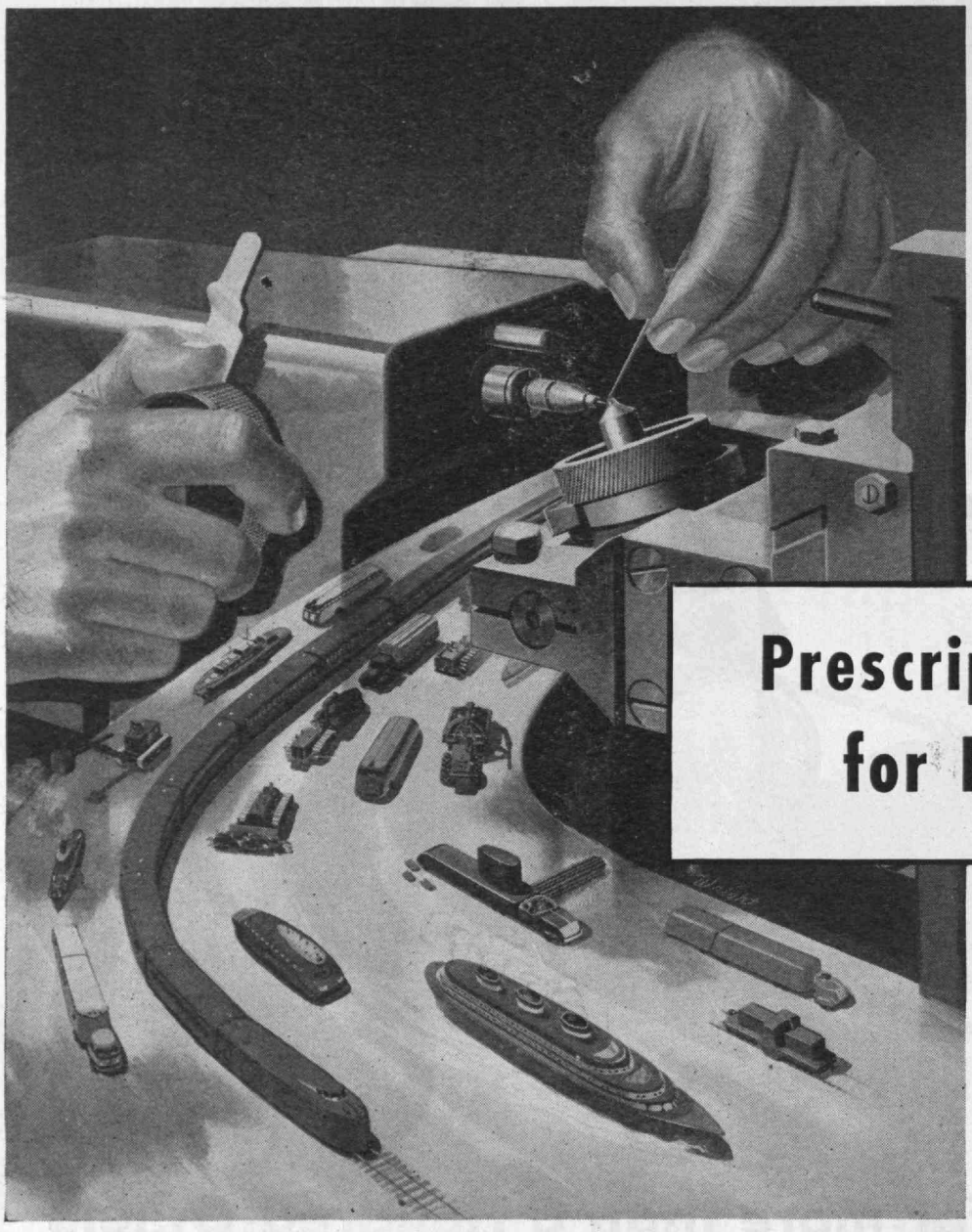


Paid for more than a Hundred Others

That's a conservative statement, for the average eye accident costs $343 for medical expenses and compensation, and safety goggles cost only about $1.50 per employee.
An AO Safety Representative will be glad to consult with your Safety Director and help work out a sound program for lower costs through safer methods.

American Optical
COMPANY
SOUTHBRIDGE, MASSACHUSETTS

THE TECHNOLOGY REVIEW, July, 1945. Vol. XLVII, No. 9. Published monthly from November to July inclusive at 10 Ferry Street, Concord, N. H. Publication date: twenty-seventh of the month preceding date of issue. Annual subscription $3.50; Canadian and Foreign subscription $4.00. Entered as second-class matter at the Post Office at Concord, N. H., under the Act of March 3, 1879.



Prescription for Precision

Take a drill as thin as a human hair. Bore finer-than-pinpoint holes through Diesel fuel injection nozzles made of steel. Keep those holes uniform in size; make certain that the angle of each of these pore-like passages is exact so that the fuel may be delivered to the cylinders as a highly-combustible spray pattern of the correct size and shape for maximum engine efficiency.

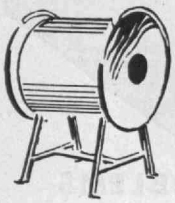
Those are typical requirements of just one of countless specialized tasks at American Bosch. Two factors make such precision possible. One is craftsmanship that has become a tradition. The other is the knowledge and experience necessary to develop fuel injection and ignition equipment that keeps pace with the accelerating evolution of internal-combustion engines. The combination of these twin skills is known as Precision Production for Power. This is the magnet which continues to draw so many of the Nation's engine builders to American Bosch.

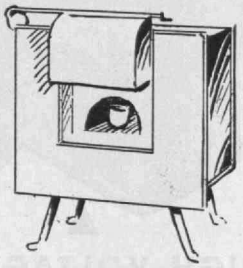
AMERICAN BOSCH CORPORATION • *Springfield 7, Mass.*

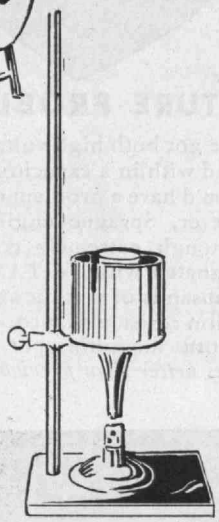
AMERICAN BOSCH

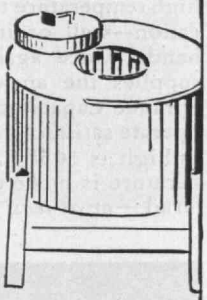
PRECISION PRODUCTION FOR POWER

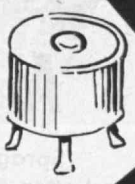
NEW! Pure Oxide Refractories by NORTON









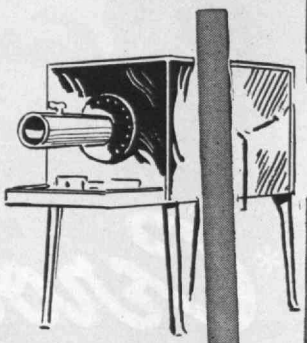


WITH the manufacture of a line of Pure Oxide Refractories, Norton Company is opening new fields for high temperature research. Refractories made from unbonded oxides (of aluminum, beryllium, thorium, magnesium and zirconium) can be used at temperatures up to 2800° C. For more than 25 years, Norton has been pioneering in the development of high temperature refractories: bricks, grain, cements, special shapes; tubes, cores and muffles; laboratory ware.

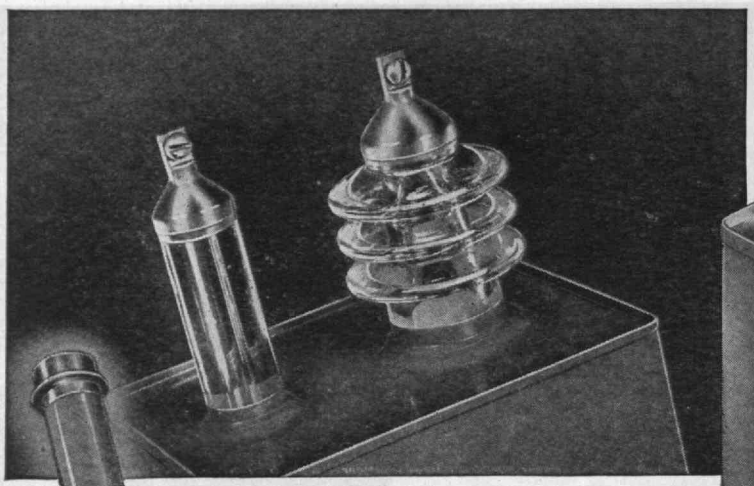
Pure Oxide Refractories will advance research and development of high melting metals and alloys for industrial progress.

NORTON COMPANY
Worcester 6, Massachusetts

Behr-Manning, Troy, N. Y. is a Norton Division



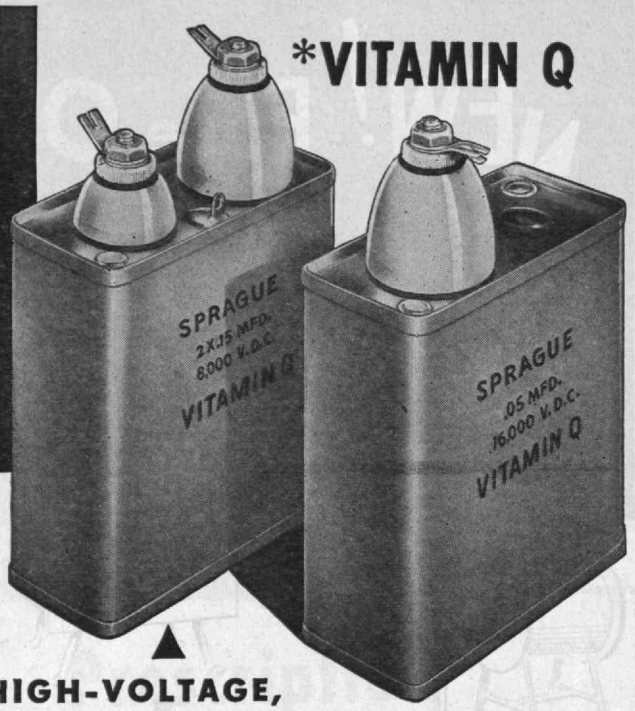
NORTON REFRACTORIES



GLASS-TO-METAL SEALS

The old problem of protecting various capacitor and resistor types against leaks and moisture is solved by a unique glass-to-metal seal pioneered and perfected by Sprague. Glass capacitor bushings are sealed direct to the metal container and do not require adjacent metal rings with "matched" coefficients of expansion. On Sprague *KOOLOHM Resistors, the units are encased in glass tubes which are sealed directly to the metal ends. The resulting seals are leak-proof, shock-proof, humidity-proof, and fungus-proof.

*VITAMIN Q



HIGH-VOLTAGE, HIGH-TEMPERATURE PROBLEMS SOLVED

When you've got both high voltage and high temperature to contend with in a capacitor application—well, ordinarily, you'd have a problem on your hands. Once again, however, Sprague engineering supplies the answer. Although extremely compact, Sprague Capacitors impregnated with *VITAMIN Q operate satisfactorily at thousands of volts at ambients as high as 105° C. Insulation resistance at room temperature is more than 20,000 megohms per microfarad—*or at least five times better than previous types!*

ARMY E NAVY

A Step Ahead!

Sprague engineering progressiveness is no better exemplified than by the three outstanding achievements depicted here. And remember, such developments are only the high spots! Equally important is the fact that similar, if less startling, engineering superiority is evidenced *in every one* of the hundreds of Sprague Capacitor and *Koolohm Resistor types that are regularly produced. Even small points of departure from the conventional often make a startling improvement in results—and no type or design produced by Sprague is so humble as to fail to receive regular engineering attention in a constant effort to surpass for Tomorrow that which is "best" Today.

SPRAGUE ELECTRIC COMPANY
North Adams, Mass.



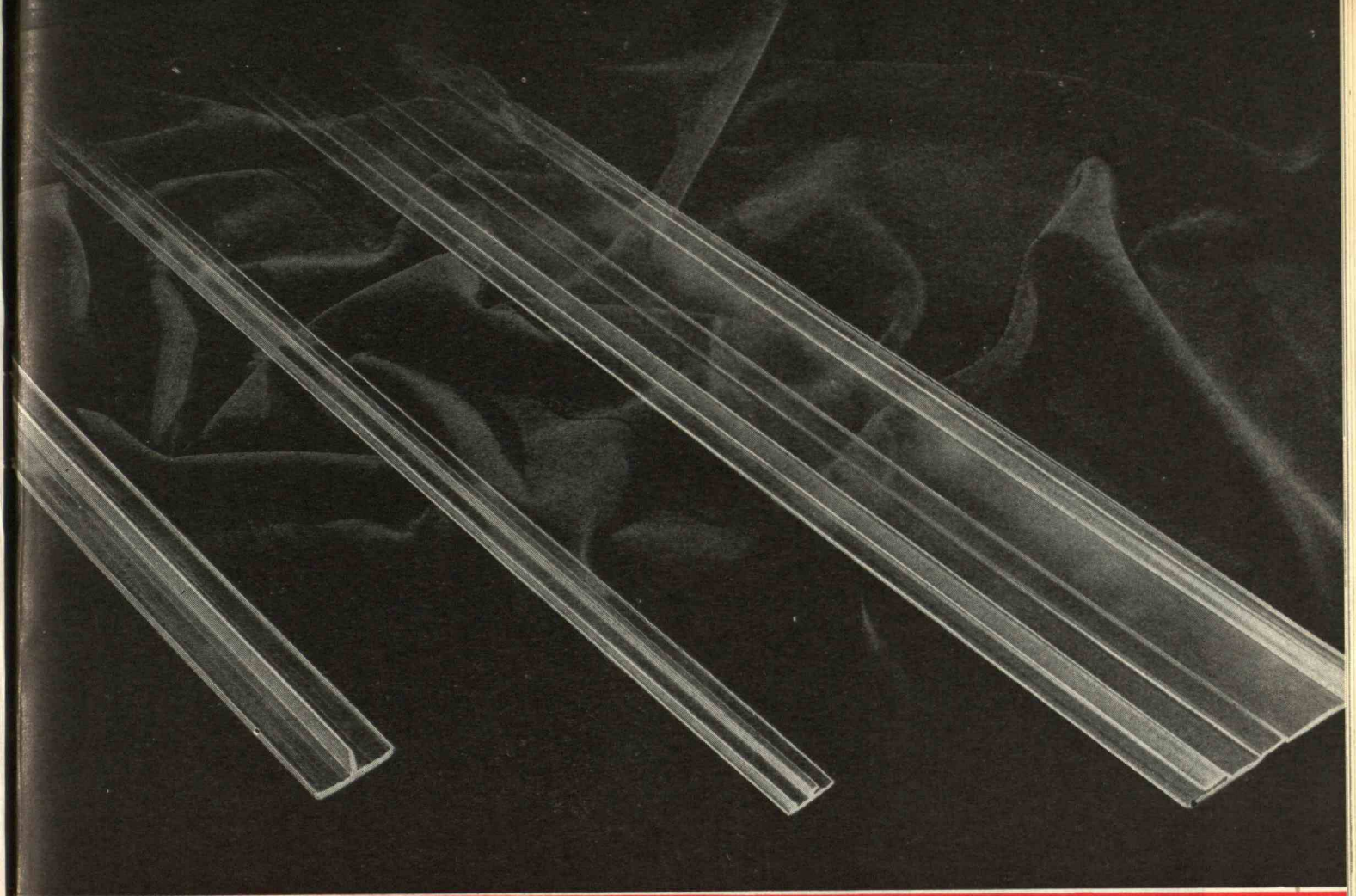
PERMITS 200° C. CONTINUOUS OPERATION

Many types of electrical equipment can now be designed for 200° C. continuous operation, thanks to the Sprague wartime development of *CEROC 200, a flexible ceramic (inorganic) insulation for copper, nickel, and other types of wire. Smaller equipment can be designed to do bigger jobs. *CEROC 200 dissipates heat rapidly and has an extremely good space factor. You'll be hearing a lot about *CEROC 200 in days to come!

*Trademarks Reg. U. S. Pat. Off.

SPRAGUE

PIONEERS OF RADIO-ELECTRONIC PROGRESS



NOW YOU CAN SPECIFY POLYSTYRENE FOR FINE EXTRUDED PLASTICS

Sandee "S" Compound Most Dimensionally Stable of All Thermoplastic Materials

Sandee research has scored again! Tubes, rods, strips, and custom sections of POLYSTYRENE have now been developed to a degree of perfection unapproached in the history of extruded plastics! This clear, stable, attractive material offers many superior advantages heretofore unobtainable in extruded plastic sections. Of all our rigid thermoplastics, SANDEE "S" Compound (Polystyrene) possesses the highest Dielectric Strength, lowest Specific Gravity, lowest Dielectric Constant, lowest water absorption. It is tough and can be extruded in intricate shapes to closest tolerances. Sandee "S" Compound is destined to become an outstanding general purpose material, in the field of plastics extrusion. Currently it is available only for war applications. If you can apply this remarkable material to your profit and advantage, we suggest discussion of your requirements with our capable engineers. May we send you a comparative data sheet?

ELMER SZANTAY, M.E. '35, GENERAL MANAGER

SALES REPRESENTATIVES IN 19 PRINCIPAL CITIE

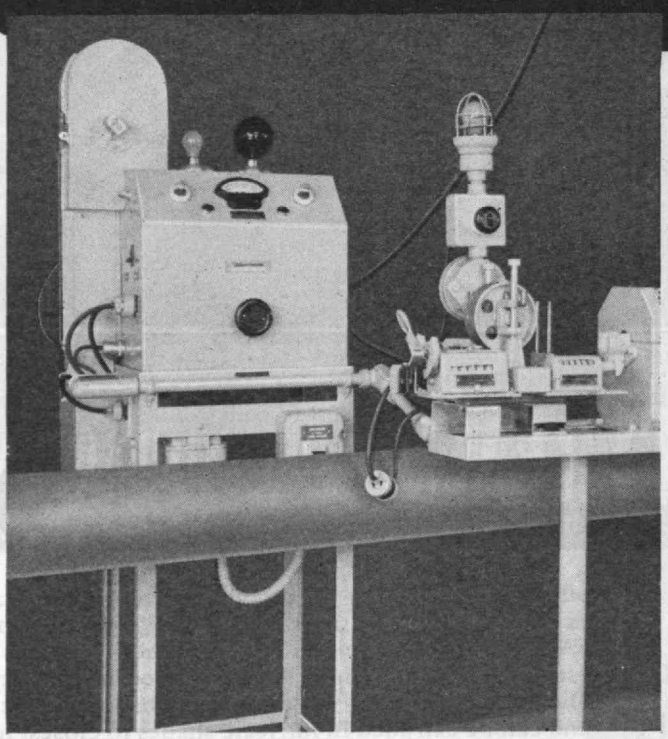
Sandee Manufacturing Company

3945 NORTH WESTERN AVENUE • CHICAGO 18, ILLINOIS

EXTRUDED PLASTICS AND SPECIAL TOOLS

JLE

SPARK-TESTING, MEASURING AND RECORDING EQUIPMENT FOR USE ON CONTINUOUS VULCANIZING AND PLASTIC EXTRUDING MACHINES



EXCLUSIVE FEATURE

GUARANTEED TO MEET ALL NAVY, SIGNAL CORPS, UNDERWRITERS', CANADIAN, BRITISH AND RUSSIAN SPECIFICATIONS FOR SPARK-TESTING.

OTHER EXCLUSIVE FEATURES:

1 Records number of insulation faults in each reel as a permanent record on a paper tape.

2 Gives positive lamp signal to indicate whether each reel, as it is finished, contains any faults, or has been subjected to an interruption of power on the sparker.

3 Indicates total faults, reels and footage produced each day or shift.

4 Gives lamp and buzzer signal, as end of a predetermined length is reached on each reel.

5 Can be adapted to initiate an automatic change-over from one take-up reel to the other at a definite length.

6 Maintains maximum sparker-fault-circuit sensitivity without adjustment of any kind for varying wire and atmospheric conditions.

Send for specification sheet.

JAMES L. ENTWISTLE CO.

43 CHURCH ST., PAWTUCKET, R. I.

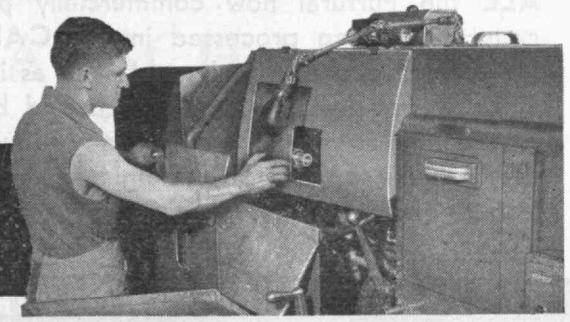
WORLD'S LEADING MANUFACTURER OF SPARK-TESTING EQUIPMENT



CHUCKING MACHINE EFFICIENCY 89.6%

Each time the ticking sound of a watch movement is heard, important phases of life begin and end. Whether it be in the form of a service-man's watch or in the delicately assembled timing device of an anti-aircraft shell, time must be accurate and dependable. Making good time for the past eighty-eight years, the U. S. Time Corporation of Waterbury, Connecticut, has devoted their entire experience and effort since Pearl Harbor supplying precision-built instruments of war.

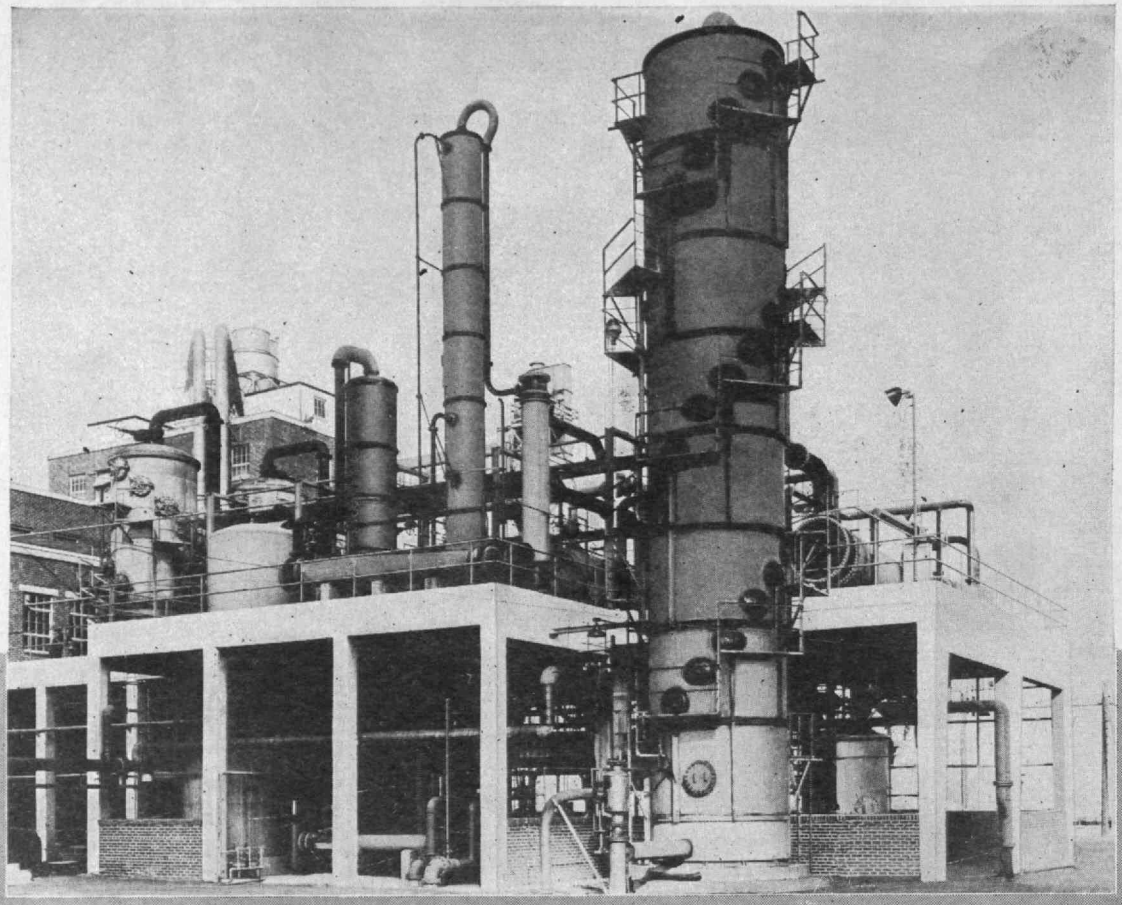
The clockwork in the fuse body of an ack-ack shell governs the instant of explosion. A flaw in the manufacturing of this timing device or the brass fuse body in which it rests could result in a major catastrophe. To assure perfection, the first and second operation on the fuse body has been produced for the past three years on a battery of Model 656 New Britain Multiple Spindle Automatic Chuckers. The leaded brass forgings are machined at the rate of 237 fuse bodies per hour per machine, with carbide tip tool life running 2500 to 3000 pieces per grind. This machine performance, coupled with competent personnel and an organized inspection requiring 36 gauging operations, has made it possible to achieve the unheard of machine efficiency of 89.6% . . . This story is but one of the many New Britain case histories of the present war effort . . . superior productivity that can automatically be the tip-off to your winning peacetime manufacturing battles . . . quickly and economically. Consult with our Sales-Engineer in your area or, should you prefer, communicate direct.



NEW BRITAIN AUTOMATICS

THE NEW BRITAIN MACHINE COMPANY
NEW BRITAIN, CONNECTICUT
New Britain-Gridley Machine Division

M-01015-A



FURFURAL RECOVERY PLANT

operated by THE Q. O. CHEMICAL CO.

as Agent for RUBBER RESERVE CO.

Designed and Built by

VULCAN

FOR years Furfural has been one of the most extensively used selective solvents for the refining of lubricating oils. A new demand — war created — for the processing of butadiene from petroleum for synthetic rubber production necessitates large additional quantities of Furfural for use as the selective solvent.

ALL the Furfural now commercially produced in this country is being processed in **VULCAN** designed and fabricated recovery equipment such as illustrated above. This unit was designed, engineered and built by Vulcan in record time to meet the emergency requirements — a further example of **Vulcan's** pre-eminence in the highly specialized chemical engineering and process equipment field.

Engineers and Fabricators of

DISTILLATION EVAPORATION EXTRACTION

PROCESSES and EQUIPMENT

THE VULCAN COPPER & SUPPLY CO., CINCINNATI, OHIO



WITHOUT BALCOTE

Before the application of Balcote to a lens system in a camera or binocular, light striking the lens often obscured the scene. This picture was taken through a standard B&L uncoated lens. The best possible print was made from the negative thus secured.

WITH BALCOTE

A Balcote surfaced lens under identical conditions reveals the scene sharply, clearly, and with greater brilliance. This picture, taken through the same type B&L lens with Balcote finish, was given identical exposure and development. Note the detail and clarity in the print from this negative.

Valentino Sarra made the above two photographs with two cameras with simultaneous and equal exposure.

"*Balcote*" Revolutionizes Optical Science

To build lens systems that would let more light through . . . that would eliminate the light loss and the "flare" caused by internal reflections . . . that would give sharper, clearer, more brilliant images . . . has been the objective of scientists for years.

Long before the war, Bausch & Lomb had developed methods of coating lenses to reduce reflections and permit the passage of more light. As a result, Bausch & Lomb, in 1939, introduced B&L Super Cinephor Projection Lenses with antireflection coatings. These lenses were used in projecting the Technicolor motion picture, "Gone With The Wind." Because these lenses passed 30% more of the light, it was possible to obtain the richer, deeper colors on a larger screen.

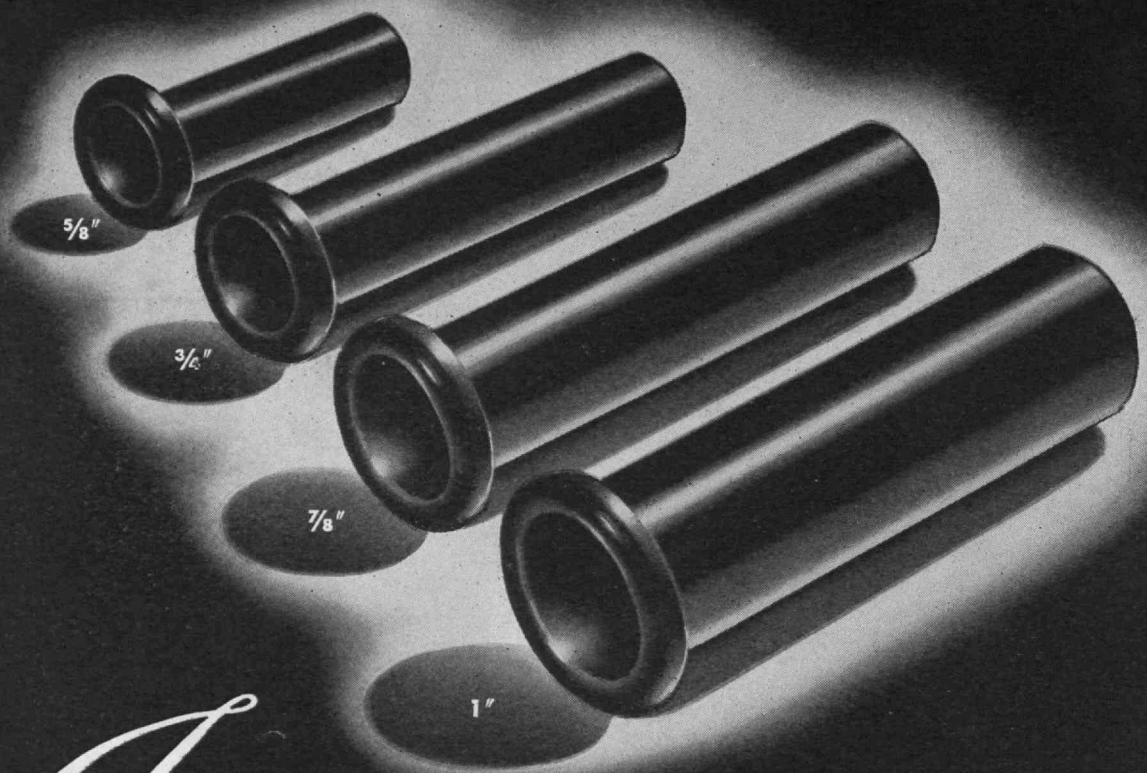
A further improvement of this same coating, today known as *Balcote* and recognized as among the best and most permanent available, is used on B&L Photographic Lenses, other military optical instruments, and wherever light transmission is a problem. In wartime binoculars, the use of *Balcote* has meant an increase of as much as 54% in brilliance. In peacetime products, it will help to set new standards for performance in every optical application for which it is used. Bausch & Lomb Optical Co., Rochester 2, New York.

BAUSCH & LOMB

ESTABLISHED 1853

Makers of Optical Glass and a Complete Line of Optical Instruments for Military Use, Education, Research, Industry, and Eyesight Correction and Conservation

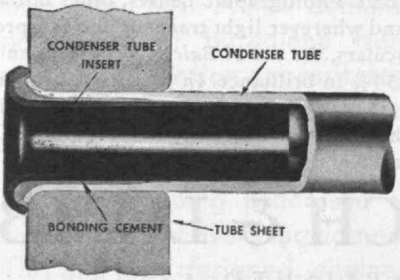
Make CONDENSER TUBES *Last Longer!*



Install JOHN CRANE
CONDENSER TUBE INSERTS

Unprotected condenser tubes most often fail at the inlet end; the section most vulnerable to pitting and thinning. The John Crane Condenser Tube Insert *armors* the belled mouth and entrance section of the tube—*completely eliminates inlet end air erosion and sand abrasion;* helps to prevent outages.

These Inserts are molded of a *hard, wear-resistant* bakelite material, unaffected by temperatures to 275° F. and resistant to contaminated salt or fresh water. Installation is easy on old or new tubes: simply slip the Insert into place. Available for 5/8" and 3/4" 16 gauge, or 5/8", 3/4", 7/8" and 1" 18 gauge tubes.

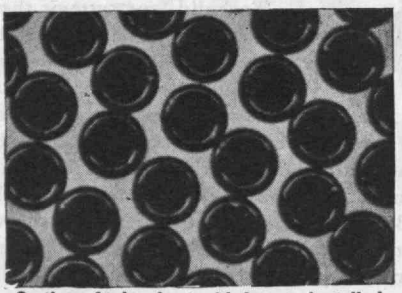


Insert in position. Flow is streamlined.

Service tests over a long period of time show that John Crane Condenser Tube Inserts

- **Greatly lengthen tube life**
- **Save critical metals**
- **Pay for themselves many times**

Send for illustrated bulletin, or consult our branch office nearest you for full information.



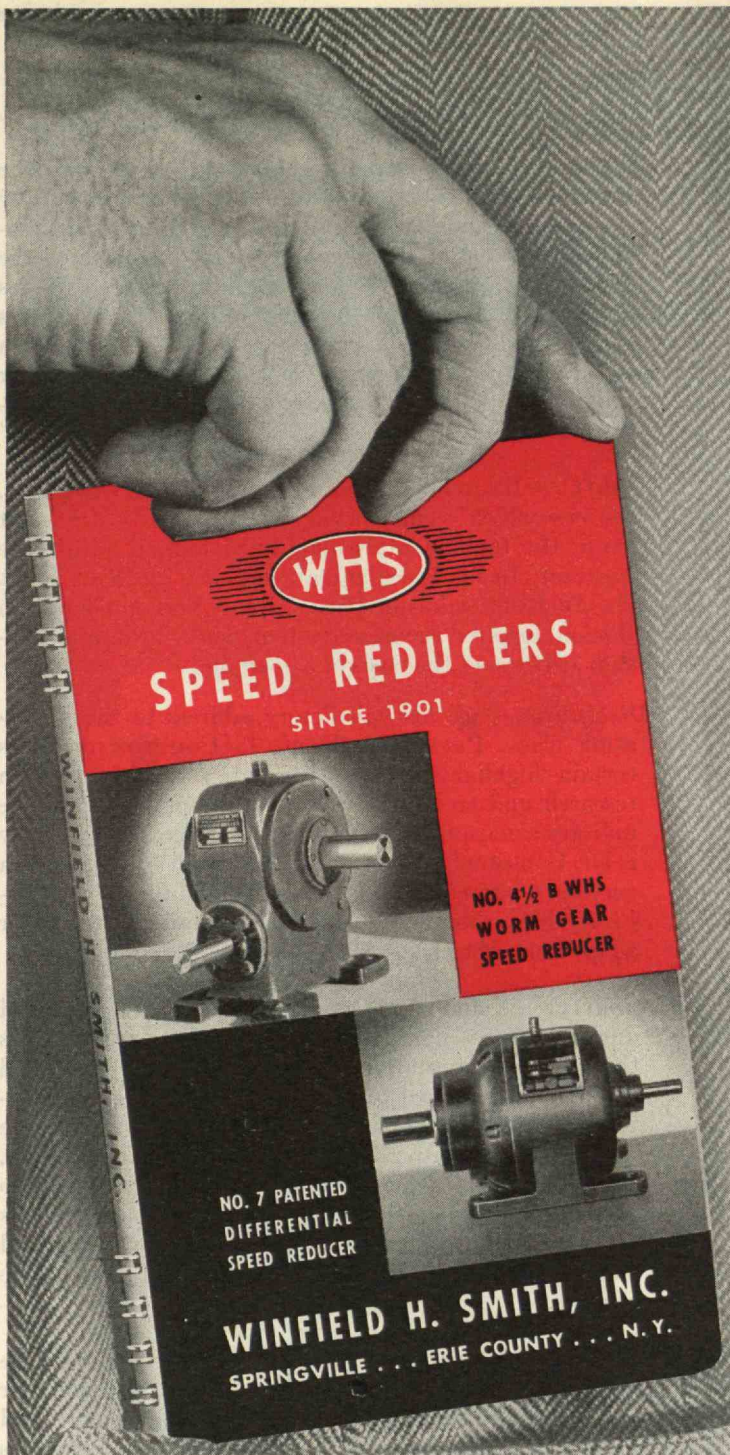
Section of tube sheet with Inserts installed.

CRANE PACKING COMPANY

1888 CUYLER AVE. • CHICAGO 13, ILL.

BALTIMORE, BOSTON, BUFFALO, CLEVELAND, DALLAS, DETROIT, HOUSTON, LOS ANGELES, NEW ORLEANS, NEW YORK, PHILADELPHIA, PITTSBURGH, SAN FRANCISCO, ST. LOUIS, TULSA

CRANE PACKING CO., LTD., Hamilton, Ontario, Canada.
Branches: Montreal, Toronto, Vancouver



Your POCKET-SIZE EDITION *of the* WHS SPEED REDUCER CATALOG *is ready!*

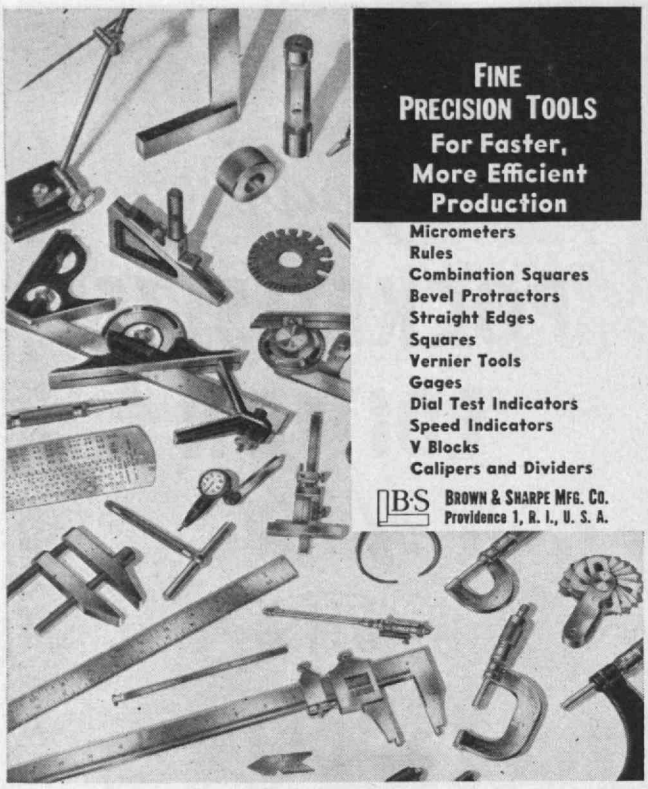
Everything contained in our recently published file-size Catalog No. 144 is condensed into very readable, practical form in this new Junior Catalog No. 145. Includes a comprehensive Engineering Section as well as valuable data on overhung loads, lubrication, torque vs. horsepower, selecting your Speed Reducers, etc.

To secure your copy of Catalog No. 145 please address us on your business letterhead, stating position held. WHS Speed Reducers are manufactured by the "Makers of the First Speed Reducers in America to be Shipped from Stock".

CUTTER P. DAVIS, M.I.T. '19, President

WINFIELD H. SMITH, Inc.

55 MAY STREET... **SPRINGVILLE**.. ERIE COUNTY.. **NEW YORK**



BROWN & SHARPE TOOLS

New Products

- A well established medium-sized engineering and manufacturing firm, experienced in solving engineering problems and in building equipment for the Textile, Food, and Chemical Process Industries, would welcome the opportunity to consider new ideas for standard products. This company would be interested either in purchasing new products or assisting in their development and commercialization.

- The majority of the engineers and executives in this firm are M.I.T. men who would anticipate the pleasure of working with you in the development of new products. All replies will be treated in the strictest confidence.

Reply to Box C

THE TECHNOLOGY REVIEW
M.I.T., Cambridge 39, Massachusetts

THE TABULAR VIEW

Deliverance. — Research recently carried out at the Institute in an effort to alleviate the suffering from ivy poisoning is summarized by DR. IRWIN W. SIZER, Associate Professor of Biology and recent recipient of the Eli Lilly award of $5,000 for continuing research studies in this field. A study of the cause of dermatitis suggests the possibility that a cure may be effected through oxidation of the vesicant molecules by the copper protein compound, tyrosinase, obtained from the common mushroom.

Uplift. — If life be divided into two separate categories, the one which seems to vary is found to be transient froth; the fundamentals underlying human nature are constant. In his baccalaureate sermon, the REV. CARL HEATH KOPF, minister of the Mount Vernon Church in Boston, inspired the message that work, love, and worship are forever the basis of a good life.

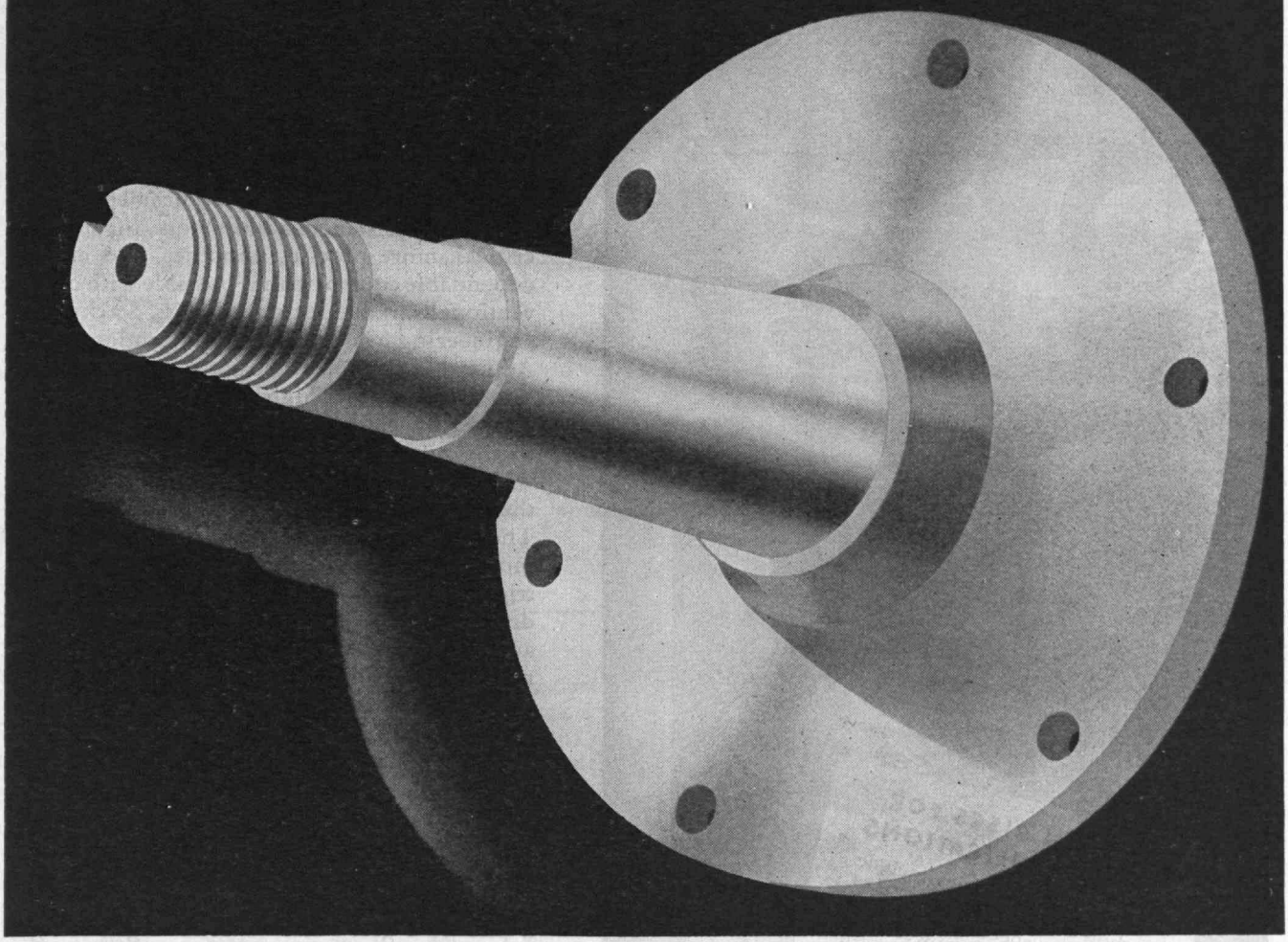
Discipline. — In his valedictory address to the graduating class, PRESIDENT KARL T. COMPTON discloses certain highlights of the Institute's participation in research and training for the war. Reminiscent of the military atmosphere which permeates Technology today is Dr. Compton's well chosen theme that "discipline is a necessary prerequisite to freedom." Rather than subjugate him, discipline enables the individual to better adapt himself to his social environment.

Liberty. — Valuable and costly lessons have been learned during the present war, but few stand out so clearly as the need for international good will and whole-hearted co-operation, backed by coercion when necessary. CAPTAIN D. L. MADEIRA, Director of Training for the United States Navy, develops the thesis that coercion, far from being immoral, has a very important part to play in maintaining the peace. The civilian populace as well as the military personnel must be properly educated and trained for aggressive co-operation to prevent future combat.

Exceptional Youths. — Recounting his long and active association in the Institute's management as a member of the Corporation, GERARD SWOPE, '95, recently retired President of the General Electric Company, celebrates his 50th graduation anniversary by urging that greater emphasis be placed on the educational development of exceptional students. Increased participation on the part of Alumni in the management of Institute affairs is also called for.

The Review is not published during the summer months following July. This issue, therefore, concludes Volume 47. Number 1 of Volume 48 will be published on October 27 and dated November. Readers who bind their copies are reminded that if they possess nine issues of Volume 47, their files are complete. An index to the volume will be ready on September 30 and will be supplied post free upon request.

Molybdenum is an economical preventive of temper brittleness in steel.



CLIMAX FURNISHES AUTHORITATIVE ENGINEERING DATA ON MOLYBDENUM APPLICATIONS.

ARMY E NAVY

MOLYBDIC OXIDE, BRIQUETTED OR CANNED • FERROMOLYBDENUM • "CALCIUM MOLYBDATE"

Climax Molybdenum Company

500 Fifth Avenue · New York City

MOLY



STACKPOLE

CONTINUOUSLY ADJUSTABLE CARBON RHEOSTATS

(CARBON PILES)

Under impetus of war requirements demanding resistance adjustments for more critical, more precise, smoother, and more dependable control than is possible with conventional variable resistance units, Stackpole engineering has developed the Continuously Adjustable Carbon Rheostat formed of carbon disc piles to a high degree of efficiency. Simply by changing the pressure applied to the pile, every possible resistance value within its range is available without opening the electrical circuit in which it is connected. The pressure to vary the resistance to the most critical adjustment may be applied electrically, mechanically, centrifugally or hydraulically. Uses range from both generator and line voltage regulator applications to remarkable speed control through governed field current on motors. Many other projects incorporating the Carbon Pile Resistor are now in the development stage.

Stackpole regularly supplies Carbon Piles in practically any length pile and diameter required. Resistance ranges have been materially expanded and a greater degree of resistance variation may now be obtained in a pile of a given size. Careful engineering control of manufacture assures a high degree of uniformity on a quantity production basis. Write for bulletin giving complete data.

CARBON DISCS FOR OTHER APPLICATIONS

Other Stackpole types include carbon discs for electric brakes for trucks, speed governors—or wherever a little power must control a lot of power with utmost precision, smoothness, and dependability.

STACKPOLE CARBON COMPANY

St. Marys, Pa.

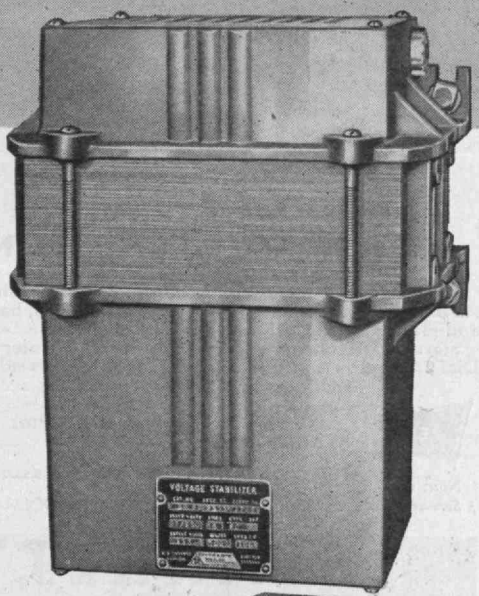
OTHER STACKPOLE PRODUCTS

BRUSHES - CONTACTS *(All carbon, graphite, metal, and composition types)* IRON CORES RARE METAL CONTACTS
WELDING CARBON PRODUCTS VOLTAGE REGULATOR DISCS BATTERY CARBONS
PACKING, PISTON, and SEAL RINGS POWER TUBE ANODES, etc.

RAYTHEON VOLTAGE STABILIZERS

Keep Varying Input Voltages Uniform

at ±½% of 1%



ENDBELL MODEL

Built into new equipment or incorporated into equipment already in use, Raytheon Voltage Stabilizers improve the operation of electrical equipment by stabilizing varying input voltages to ±½% of 1% within 2 cycles.

Because they have no moving parts . . . nothing that wears out, they require no adjustments or maintenance. Simply hook them up and Raytheon Voltage Stabilizers will give years of trouble-free service.

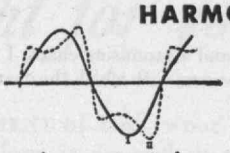
Many models and ratings are available for practically every application requiring uniform voltage. All stabilize voltages at any load within ratings to ±½%.

Standard Raytheon Voltage Stabilizers may be had for controlling A. C. input variation of 95 to 130 volts or 190 to 260 volts. Write for bulletin DL48-537. It gives dimensions, operating characteristics and other important data.



CASED MODEL

HARMONIC CONTENT

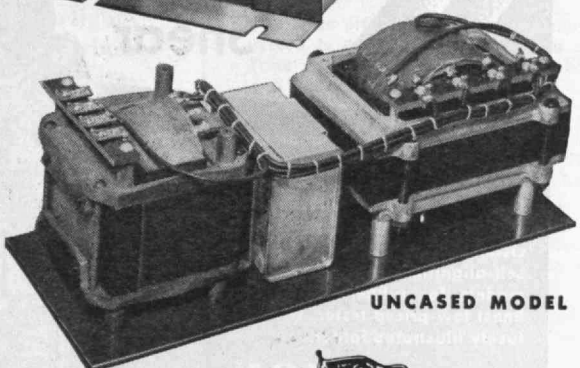


The high magnetic density in one of the transformers introduces harmonics in the output voltage wave. The actual harmonic content is usually unimportant except when instruments are being calibrated.

The output wave form is illustrated in the accompanying figure and table.

ANALYSIS OF OUTPUT VOLTAGE

Curve No.	Input Volts	Percentage Harmonic 1st	3rd	5th	7th
I	95	99.4	7.1	2.2	Trace
II	131	96.8	24.0	7.0	3.6



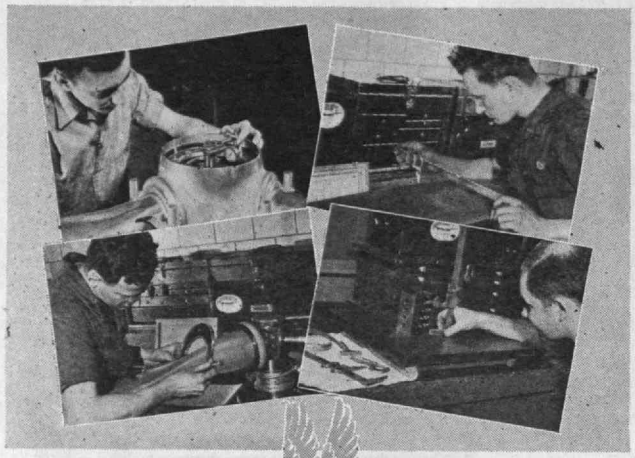
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Tune in the Raytheon radio program: "MEET YOUR NAVY," every Saturday night on the Blue Network. Consult your local newspaper for time and station

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MANUFACTURING COMPANY
Electrical Equipment Division
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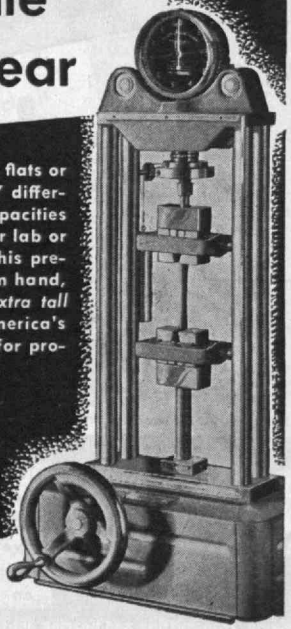
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MAIL RETURNS

We Must Have Been Cucu

FROM CHARLES H. BLAKE, '25:

Of course The Review could not have erred. The first heading in "The Trend of Affairs" for May was put in only to draw fire and disclose the position of our hidden batteries. No doubt many persons would agree that the morals of cuckoos (Cuculidae) are such that these otherwise useful birds should be exterminated. On reading further I found, to my disappointment, that the note dealt with mosquitoes (Culicidae). It would be most unfortunate if mosquitoes should be exterminated. Not only are they a valuable counterattraction to the August weather as a topic of conversation but many of us obtain much needed light exercise slapping them.
M.I.T., Cambridge, Mass.

More Technical Treatment

FROM W. WALLACE MCKAIG:

Has it ever occurred to you that your paper would be more interesting if it were a little more technical and not quite so general? There is such a vast amount of good material at the Institute that I do not feel you would have any difficulty in getting papers of a more technical nature.
Cumberland, Md.

Credit Where Due

FROM MICHAEL L. RADOSLOVICH, '26:

Dr. Edwin S. Burdell, '20, of Cooper Union has asked that credit be given to the Technology men who contributed to the design of the asphalt plant pictured on the cover of The Review for May.

The correct credit is as follows: Operating under the office of the Borough President of Manhattan are the following Alumni: Walter D. Binger, '16, commissioner; Charles S. Williams, '11, assistant commissioner, and Lester C. Hammond, '02, chief engineer. As consultants for the asphalt plant, Ely Jacques Kahn and Robert Allen Jacobs designed the buildings.

It was my job to co-ordinate the architectural design and supervise the preparation of drawings with the assistance of Mr. Jacobs and Mr. Hammond.
New York, N. Y.

"— And Pass the Ammunition"

FROM L. MOLOLY-NAGY:

In the midst of moving crates and a promising chaos, I hasten to tell you how excellent I find your June issue with which the dear and honored editor makes his exit.
Chicago, Ill.

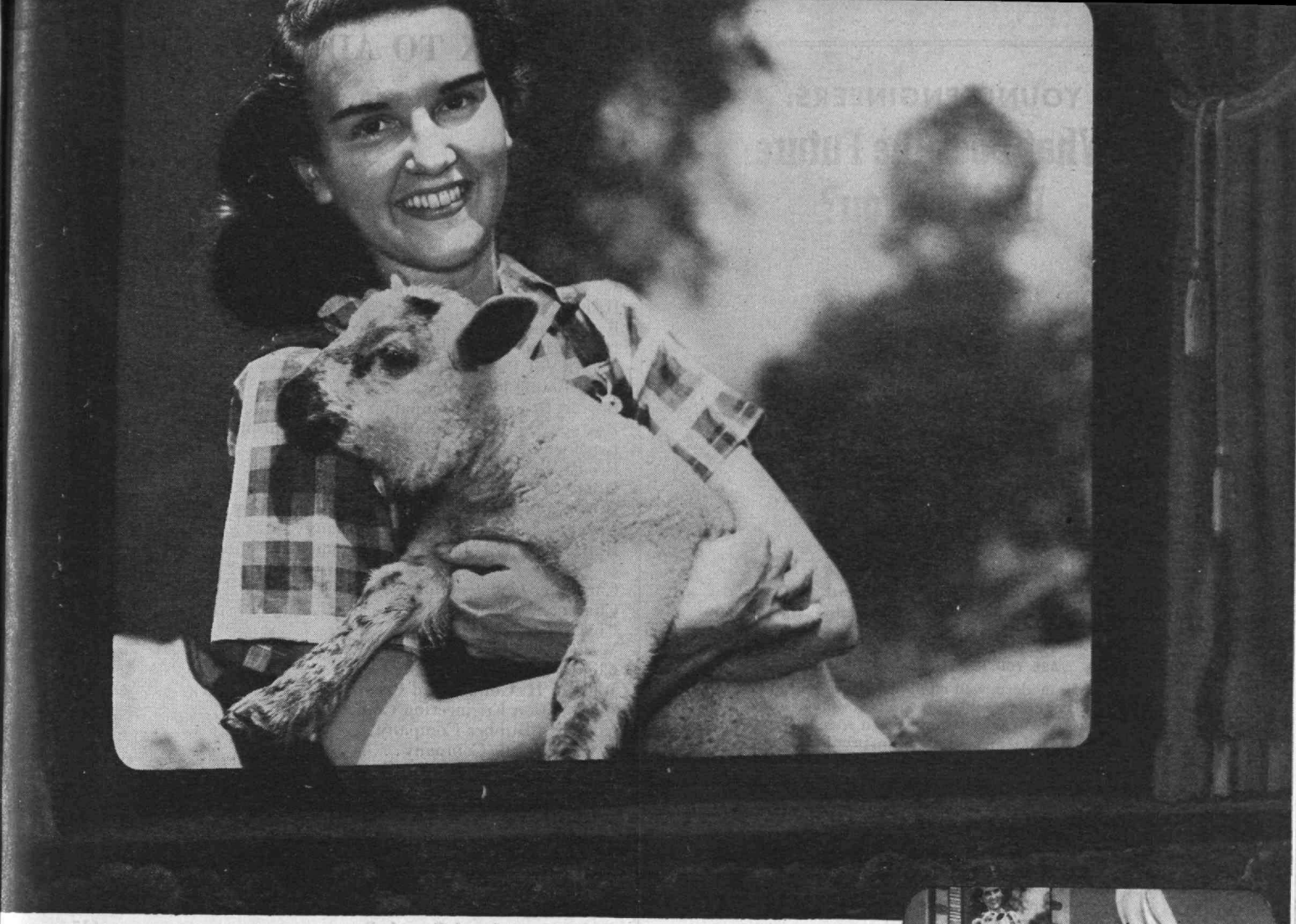
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Alfred T. Glassett, '20, Vice President



Light for your favorite Stars . . .

YOUR ENJOYMENT of Hollywood's brilliant productions is dependent on the blackest substance known to man—carbon.

From a booth at the rear of your movie theatre, the intense snow-white light of a carbon arc projects the tiny pictures from the film, enlarged as much as 300,000 times in area, onto the screen.

Only the carbon arc with its concentrated brightness can do this difficult job.

The carbon arc—a subject of years of research by NATIONAL CARBON COMPANY, INC., a Unit of UCC—also serves in many ways other than on the motion picture set and in movie projectors.

Military searchlights, as well as lights for photoengraving, employ the carbon arc. It is also used to increase the Vitamin D content of milk and other products. It has opened up new scientific methods in the analysis of metals. It brings the beneficial effects of ultraviolet rays to man. Even in agriculture, uses are being found for the carbon arc in the study of plant growth.

▼

For further information on the carbon arc . . . write for booklet P-7, "Radiant Energy."



The large picture you see on the movie screen is projected by the carbon arc from tiny frames of film, each about one-half square inch in area.

Through intensive and continuing research, National Carbon has made the carbon arc brighter and brighter. This progress made possible the intense light required for enlarged screens in large theatres. It was also a major factor in the development of improved studio techniques, and in the present day excellence of pictures in color.

Today National Carbon can produce light from the carbon arc that is actually more brilliant than the sun.

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How you may utilize, most advantageously, the knowledge and experience you have acquired, is one of the most important decisions you will make in your career.

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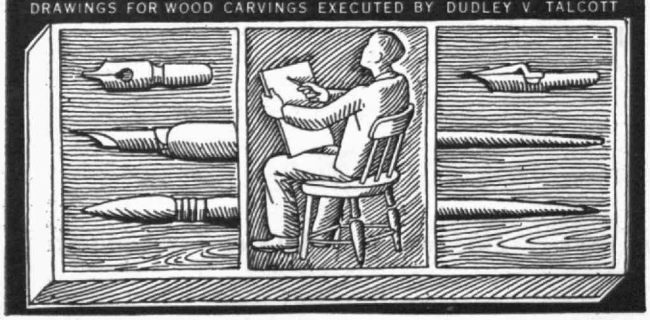
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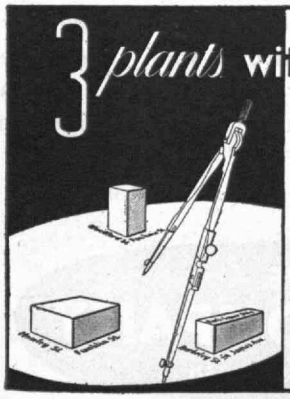


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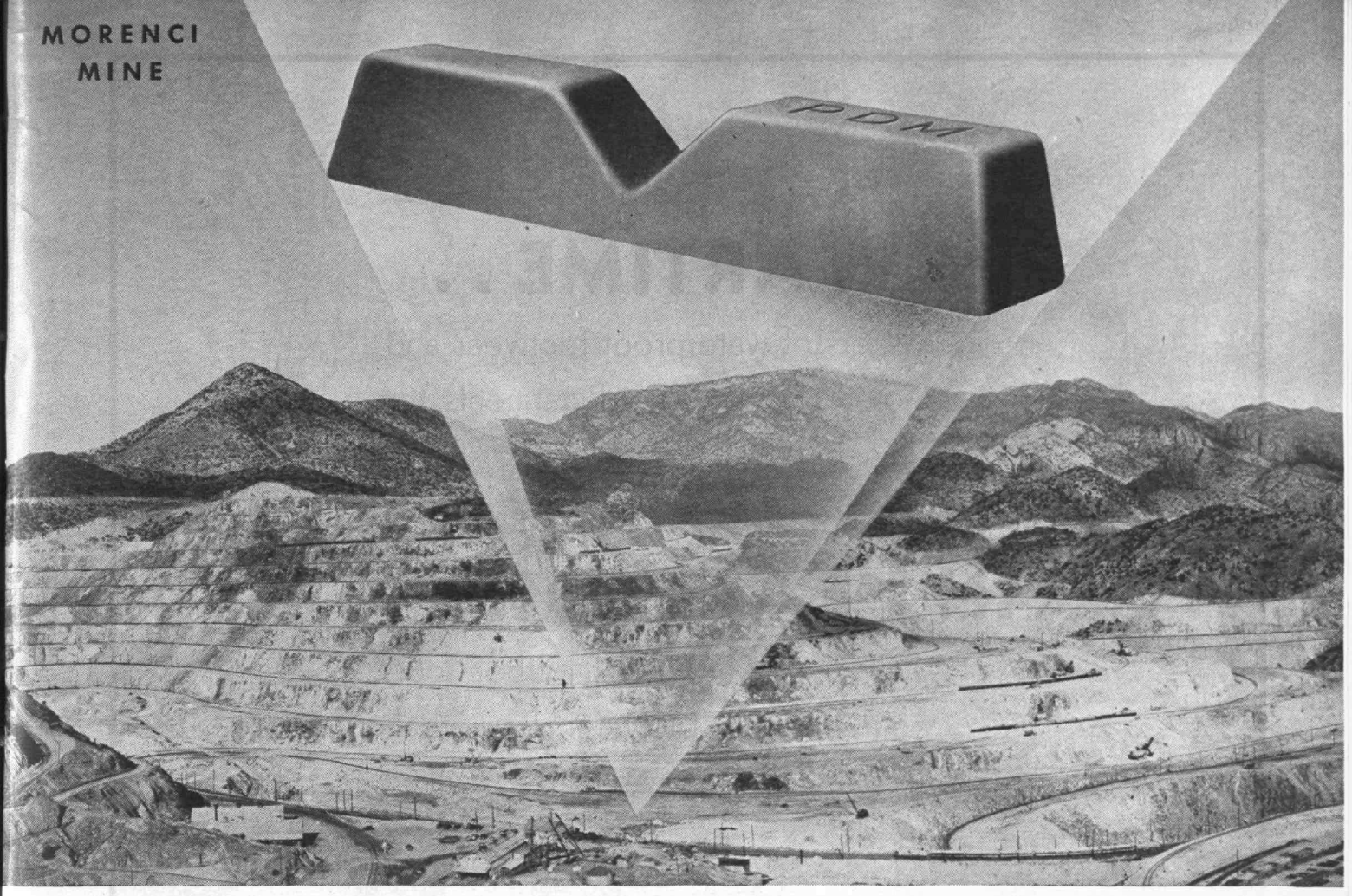
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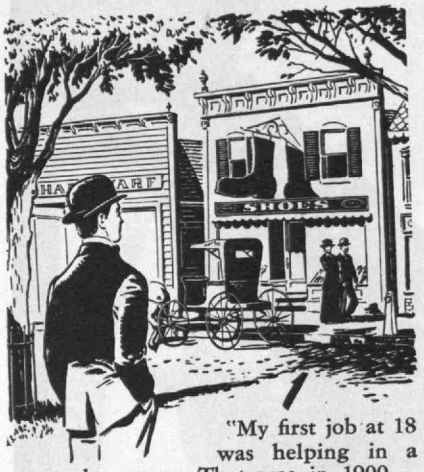


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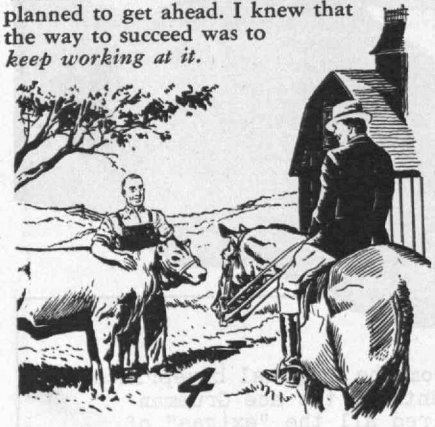
"My first job at 18 was helping in a shoe store. That was in 1900. With this modest start, I saved and planned to get ahead. I knew that the way to succeed was to *keep working at it.*



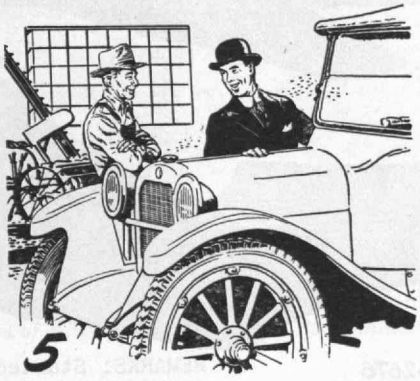
"Within a few years I had a shoe store of my own. I married and my wife helped me carry on the business. That gave me time to branch out and better myself. An opportunity soon came along.



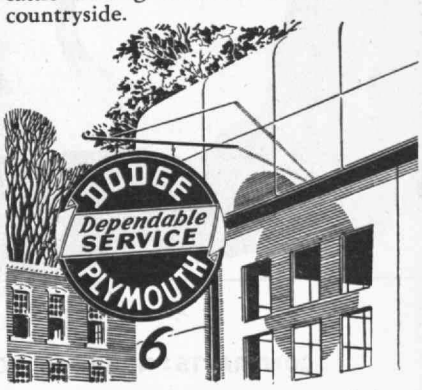
"One day I bought a horse; sold it at a profit and bought another. This business thrived and before long I acquired a livery stable as horse and cattle trading took me over the countryside.



"Dealing in livestock I found I could cover ground faster in a car and do more trading. I bought one. A farmer-customer liked it and traded me some cattle for it. I sold the cattle and bought another car.



"In 1918 I bought my first Dodge automobile, and about that time realized that more and more people were buying cars. I continued in the shoe business and livestock trading; but I also began selling cars for a local dealer along with farm machinery.



"These various interests occupied me until 1927 when I became a Dodge dealer and devoted my entire time to this. I still operate this business along with a branch in a nearby town. Before the war, with nearly 100 employees, my automobile sales exceeded $1,250,000 in a year."

* * * *

Early in life Mike recognized and followed the traditional American formula for individual progress.

He knew that with freedom of opportunity to compete with others in serving the public, the best economical security anyone could have is initiative, energy and industriousness. He was confident that under the American way . . . with the public free to choose . . . he would reap rewards in proportion to the success of his efforts. That was all the incentive Mike needed.

This dealer whom we call "Mike" is the owner of a successful business today. His progress is typical of the opportunities that exist in free competitive business.

With the return of peace this should again be true of the automobile business which has thrived by anticipating public needs and supplying them. Every branch of this industry should offer a bright future to alert, ambitious men.

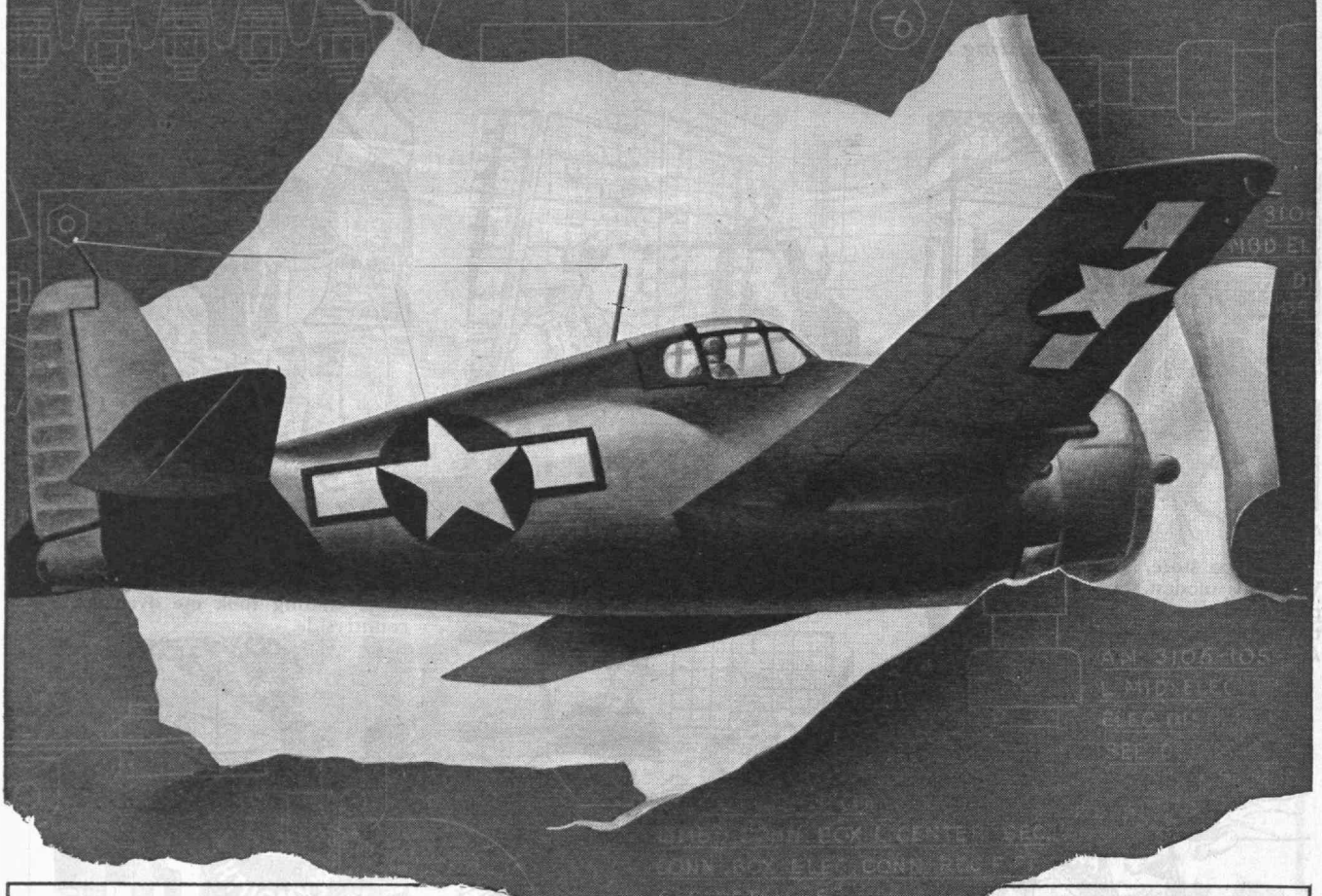
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WINGS, ELEVATORS, AILERONS, INNER AND OUTER FLAPS

CONTRACT RECEIVED: *AUGUST 1943*

FIRST PRODUCTION UNIT DELIVERED: *OCTOBER 1943*

1,700TH PRODUCTION UNIT DELIVERED: *DECEMBER 1944*

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GOODYEAR AIRCRAFT

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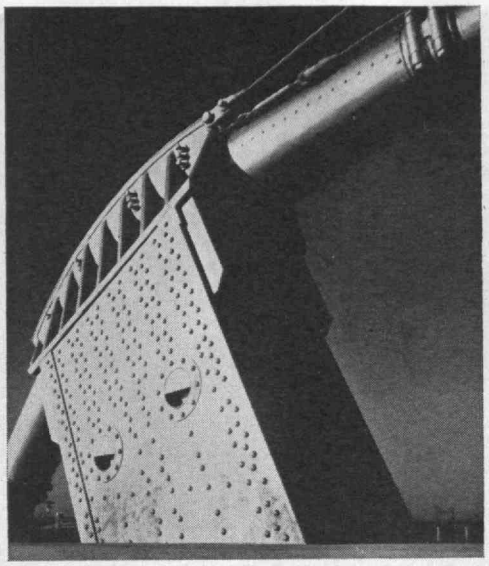
VOLUME 47 NUMBER 9

THE TECHNOLOGY REVIEW

TITLE REGISTERED U. S. PATENT OFFICE

EDITED

AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY



Dimitri Kessel from Frederic Lewis

Triboro Bridge Arch

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From a photograph by Rosskam for Standard Oil Company of New Jersey

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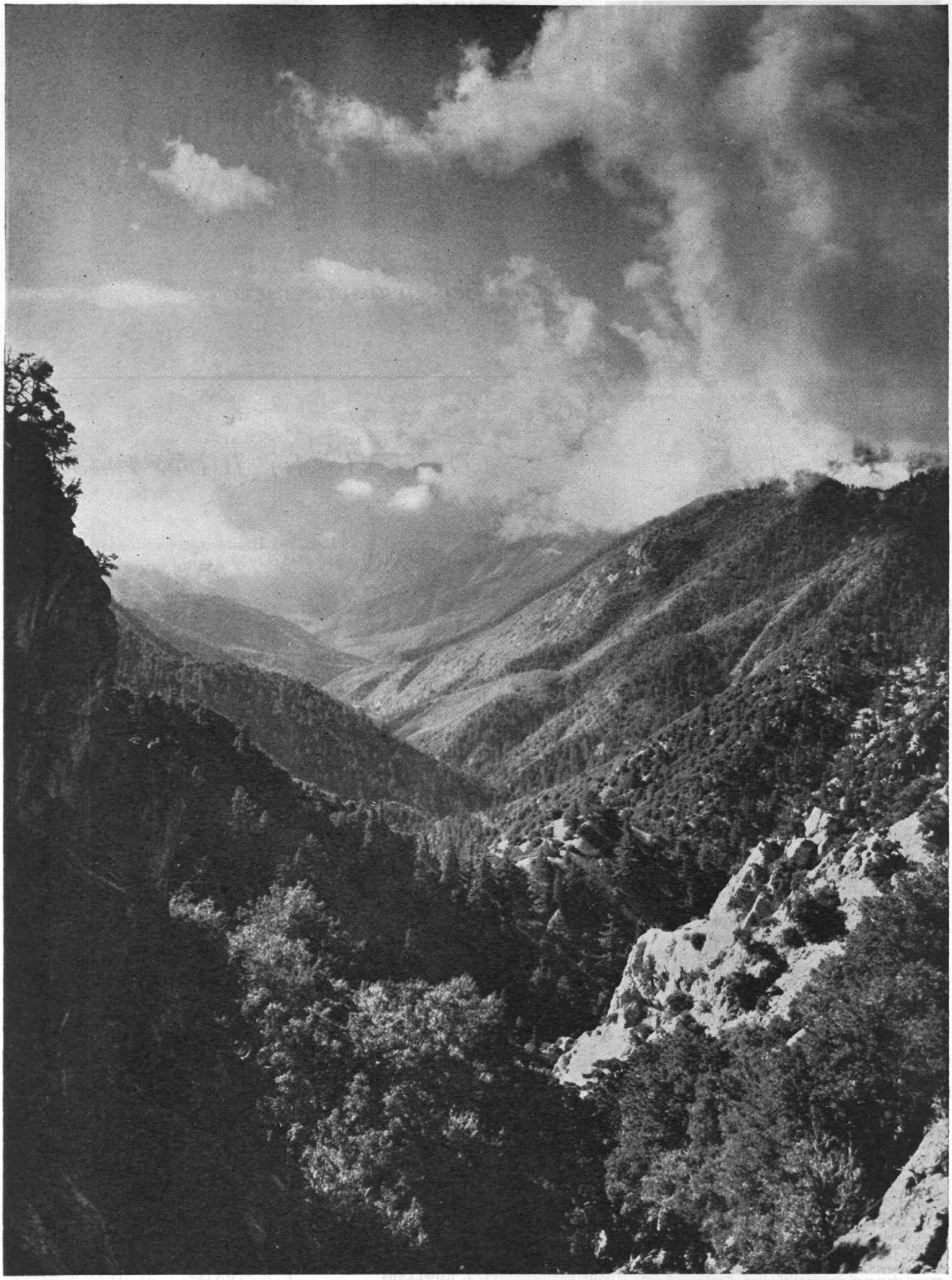
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Canyon View from Angeles Crest Highway

THE
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The Trend of Affairs

Drought in Australia

AUSTRALIA, normally one of the world's great wheat exporting regions, may this year have to import wheat and other cereals in which she usually has surpluses. During the past growing season that continent has suffered a drought which was equalled in intensity only in 1902 and 1914. Dust storms composed of precious topsoil have been seen as far as New Zealand and the Fiji Islands; sheep losses have run into the millions and the wheat crop is officially estimated as being approximately one-half that of the preceding season and about one-third of the average for the 10 years ending in 1942–1943. Lack of man power, reduced supplies of phosphates, and smaller acreage had some part in the picture, but the main element was lack of water.

The situation is of concern to the United States not only because our troops in the Pacific depend for much of their food supplies on Australia, but also because the reduction of exports from that country (at the same time that a drought has tightened supplies of grain and flaxseed in Argentina) may put a heavier responsibility on North America for the relief of European food shortages.

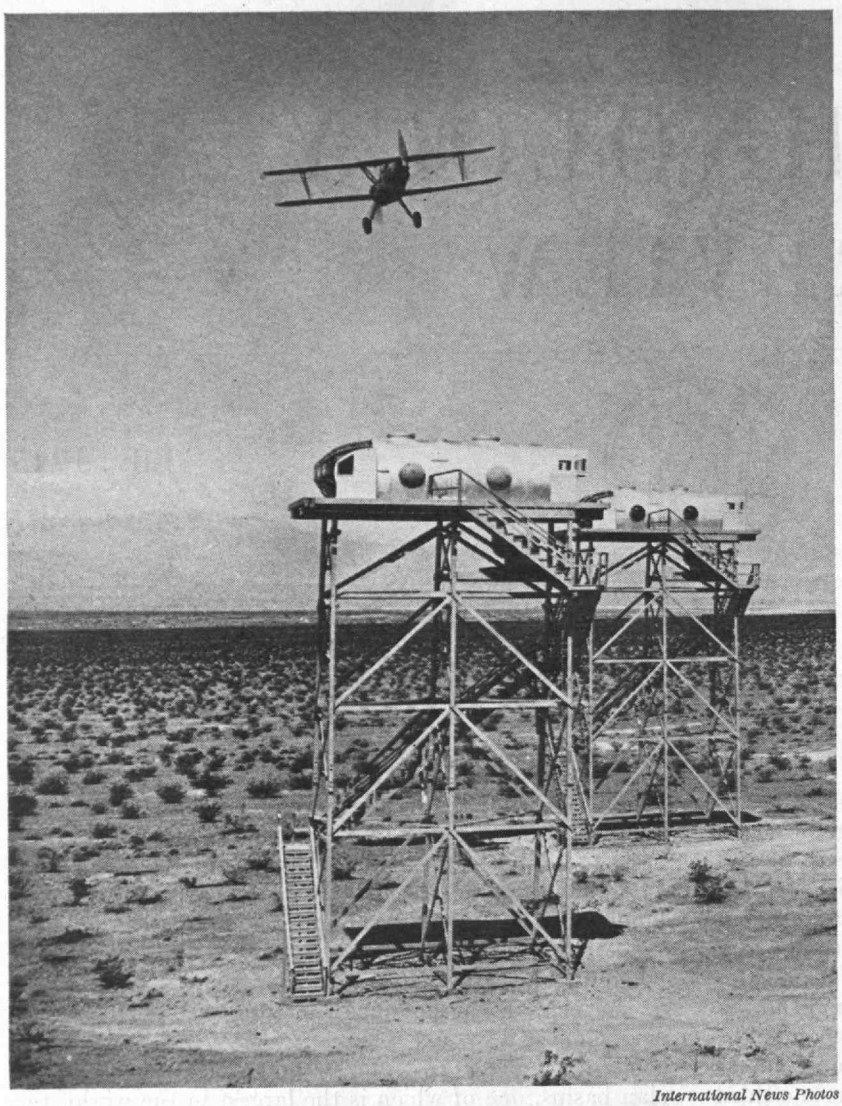
No stranger to drought, Australia offers a large-scale example of how an inadequate — and its almost invariable accompaniment, a highly variable — rainfall restricts the potentialities of the land. While parts of its tropical coasts receive sufficient rainfall to support jungles and sugar-cane fields (and the cooler regions of the east and west coasts are reasonably well watered), the great bulk of the continent is like our own West, an arid pasture land or a desert. Two-thirds of Australia receives less than 20 inches of rain per year, a condition aggravated by the position of the continent relative to the equator. The Tropic of Cancer misses every part of continental United States, but more than a third of Australia lies on the wrong side of the Tropic of Capricorn.

Throughout much of Australia the basic way of making a living, as it is in most arid regions, is by raising livestock. In 1940 Australia had 116,000,000 sheep and 13,000,000 cattle. But compared to the two acres which, on the average, will support a cow in New Zealand, it takes from 20 acres to a square mile, depending on rainfall and latitude, to support one head of cattle on the principal grazing lands of Australia. As a consequence, individual holdings tend to be large. In the interior of New South Wales, where it takes about 20 acres to support even one sheep, 85 per cent of the holdings run from 20,000 to 100,000 acres in size.

Were it not for Australia's remarkable system of artesian basins, one of which is the largest in the world, the situation would be still worse, for in many regions it would be impractical to store water during the long dry seasons for more than a fraction of the stock the ranges now support. Fortunately, it is possible to tap the water in the porous sandstone strata underlying much of Australia by drilling wells. Some wells need be only 10 feet deep, others require as much as 6,000 feet of drilling. Numerous springs mark these basins whose water is absorbed where the porous strata come to the surface in regions of plentiful rainfall or where rivers run over them. Particularly from these basins which have been exploited for the longest time there is evidence, however, that water is being withdrawn faster than it is being replenished. The water level is slowly dropping, and the total flow from more than 8,700 wells in 1939 was little more than half that from 2,200 wells in 1909.

Super Photographer of the Pacific

WHEN the B-29s go out to pay unwelcome but highly successful visits to the military installations on Japanese-held territory, they are accompanied by a plane designated as the F-13-A, which outwardly looks like just one more B-29 but which is really highly developed for photographic missions. Basically the plane is a B-29, but bomb-carrying capacity has been sacrificed to enable the F-13-A to carry a number of cameras and also additional fuel



International News Photos

B-29 fuselages with various sighting blisters and remote-control turrets are mounted on towers in combat formation at the gunnery school of the Western Flying Command at Las Vegas, Nev. As the "attacking" aircraft approaches the "Superfortresses," gun cameras record the scores of practicing students.

tanks, giving it a longer range than the B-29. Its fire power remains untouched so that an F-13-A can fight its way home from photographic missions with the same degree of success as any Superfortress.

The F-13-A carries six cameras and two additional crew members to operate them. These cameras are distributed throughout various installations in the plane and are used to make three different records: a wide-angle view for general orientation, a general purpose view of the terrain below the plane (also useful for specialized mapping), and a detailed vertical view for spotting specific targets.

The most complex installation is the trimetrogon station containing three K-17-B cameras fitted with wide-angle lenses. These three cameras photograph from 10 degrees above the horizon on one side to 10 degrees above the horizon on the other side of the ship. As the plane moves along, this bank of cameras will photograph an area about 20 miles wide with sufficient detail to be useful for mapping and identification purposes.

The wide-angle photographs made in the trimetrogon station also serve a more immediate purpose as guides for the spotting shots taken by the so-called split-vertical station which is located in front of the trimetrogon station. The vertical station contains two cameras with telephoto lenses of 40 inches focal length. The two cameras are mounted side by side in such a way that their pictures overlap slightly. Naturally they can cover only a comparatively small area with each exposure, but they cover these areas very thoroughly. Even at an elevation of 20,000 feet, individual railroad ties can still be distinguished in their photographs, which are used primarily for aerial mapping.

Between these two extreme installations, photographically speaking, is the single vertical camera fitted with 24-inch telephoto lens. It cannot cover such an extensive area as the trimetrogon station, nor can it produce such amazing detail as the two vertical cameras. But it produces fairly detailed pictures of reasonably large areas which can be fitted admirably into the overall pictures taken by the trimetrogon.

If a photographic night mission is indicated, the vertical cameras are removed and replaced by a K-19-B night camera which is tripped by a phototube which, in turn, is actuated by the sudden illumination of a flash bomb dropped for the purpose of lighting the terrain below.

Although the changes in the plane required for the installation of all these cameras are fairly complicated, they do not affect the performance of the F-13-A as a bomber. All that needs to be done is to remove all six cameras and the two extra photographers with them, and the F-13-A can go out with a full bomb load.

How to Keep Cool

MAN'S unceasing struggles against his environment are typified by his difficulties with environmental temperatures. As a homoiothermic animal the human being maintains a constant internal temperature.[1] This is done with greatest ease, as measured by subjective feelings of comfort, in the narrow range of 65 degrees F. accompanied by a relative humidity no greater than 60 per cent, to 70 degrees F. with humidity not above 40 per cent. Man readily copes with cold by means of heated shelters and warm clothing. In addition, the human body's automatic defenses against cold [1] may be assisted voluntarily by increasing muscular activity and augmenting intake of food.

But human beings have been much less successful in dealing with environmental temperatures above their optimal range. Air conditioning has spread in recent years but still is much less common than central heating. Reflex mechanisms by which the human body disposes of excess heat may be aided by the wearing of porous and lightweight clothes; clothing which is also light in color helps to exclude radiant heat. Spontaneous and voluntary

[1] See "Heat and Acid versus Life," page 165 of The Review for January, 1945.

diminution of muscular activity reduces the amount of heat from that source. The common summertime practice of bathing has two cooling effects: that of immersion in a medium cooler than the air and that of evaporation after the bather emerges.

Sweating is the body's main defense against high external temperatures. In temperate climates an active man secretes as much as three liters of sweat on a hot day; in the tropics he may secrete a liter each hour. Should water thus lost be replaced freely? Inhibition of water drinking on hot days has been urged, particularly for those doing vigorous work. A recent appraisal of the evidence on this point, however, concludes that free satisfaction of thirst in warm weather has no demonstrable adverse effects, but that, to the contrary, comfort and efficiency are promoted by regular replacement of the water lost in sweat. One hundred cubic centimeters of sweat contain about 60 milligrams of sodium chloride. In spite of this small concentration, salt lost in this way may be considerable in view of the volume of sweat secreted in hot weather. This lost sodium chloride must be replaced, because sodium ions are needed in the body for the vital mechanism which disposes of incipient acidity from tissue oxidation and muscular activity. To avoid unpleasant symptoms called "heat cramps," produced by continued depletion of salt, workers, such as furnace stokers, who are exposed to high temperatures sometimes have to swallow salt tablets or drink saline solution, but otherwise during Temperate Zone summers even the active person may depend upon his diet to keep him amply supplied with salt.

The possibility of vitamin loss in sweat has also received attention, but findings to date indicate that such losses are insignificant beside those regularly occurring in the urine and feces. Related studies have considered the human needs for vitamins in hot environments, and although this question is the center of some controversy, the weight of evidence so far indicates that such requirements do not differ from those obtained in temperate surroundings.

We have already seen that increased ingestion of food is one way of fending off cold, but unfortunately the converse of this procedure cannot be used during hot weather, as sufficient food must even then be eaten to meet the nutritive needs of the body and to satisfy hunger. Textbooks of physiology, even the most modern ones, state, however, that dietary control can help cope with heat through reduction of the diet's protein level. This recommendation is based on the fact that in physiological laboratories proteins may be shown to have high specific dynamic action, that is, specifically to stimulate tissue metabolism. This does not mean that proteins have high caloric value (for, as is well known, like carbohydrates they actually have less than half the caloric value of fats), but rather that certain products of protein breakdown have a chemically stimulant effect upon heat liberation processes, especially in the liver.

At this point the reader may feel that concern over protein intake levels is somewhat academic in the face of present protein food shortages, but to clarify this question for the future, let us consider recent studies made presumably for the benefit of our armed forces serving in the tropics. This research showed that variation of protein intake in the wide range from 75 to 150 grams daily had no effect upon either physical fitness or work output of human subjects, in hot environments both dry and humid. High specific dynamic action of proteins is not controverted, but the effect of this phenomenon was found to be not sufficiently marked to have any practical influence upon man's adjustments to hot surroundings.

So to keep cool: Minimize muscular activity, wear porous clothes light in weight and color, satisfy your thirst at will, and bathe freely. And if you should find yourself face to face with a steak, go ahead and eat it.

Taking the Itch Out of Poison Ivy

By Irwin W. Sizer

A GREAT many people are susceptible to a dermatitis caused by a toxic irritant contained in the leaves, bark, and roots of poison ivy. While some individuals claim to be unaffected by this irritant, immunity is relative rather than absolute. Tests made at M.I.T.,[1] as well as the tests performed by others, on the skin of self-styled immune people indicate a sensitivity to the active principle — a nonvolatile, acid-resinous oil which can be extracted from the plant. At the other extreme are people so sensitive that the slightest contact with the plant, with objects which have touched it, or even with the soot from a fire of burning poison ivy, will cause them to break out with a reddening of the skin accompanied by the most intense itching. In severe cases this will be followed by the formation of vesicles beneath the skin which fill up with fluid, finally breaking to release serum as a second-degree burn does. Considerable swelling of the underlying tissues may accompany these superficial phenomena, and after penetrating the skin the irritant principle may enter the blood system (especially the lymph vessels) and spread the irritation.

[1] The author is very grateful to C. E. Prokesch who has carried on most of the laboratory work in connection with this problem.



Philip D. Gendreau, N. Y.

Often growing where least desired, the three-leafed poison ivy plant is annually a source of discomfort to many vacationists.

Contrary to the belief of many, the irritant principle is not carried in the air (except when carried on the soot from a fire), and contact, either direct or indirect, is required to obtain the skin inflammation. Under normal conditions poison ivy dermatitis is not contagious, but under unusual conditions when a large quantity of the vesicant is on the skin, it can be transmitted by direct contact. This fact has been accidentally demonstrated several times in the biological laboratories at the Institute when potent extracts were being studied.

Poison ivy, which is found chiefly east of the Mississippi, grows in the form of woody vines or bushes and is most readily recognized by the leaves, which are divided into three waxy leaflets, and by the whitish, waxy fruits. Although there are harmless plants which also fit this description, it is not unwise to obey the homely saying, "Leaflets three, let it be." The poison ivy plant belongs to the cashew family (*Anacardiaceae*), all members of which produce skin irritants. Next in importance to poison ivy in this family is poison oak, which grows most abundantly west of the Mississippi. This plant belongs to the same genus as poison ivy and, as might be expected, has the same undesirable effect on the skin. Also belonging to this same genus are poison sumac (swamp sumac or poison dogwood), which grows in swamps in northern climates, and the Japanese lacquer tree, native to Japan and China, which is the source of Japanese black lacquer. A number of cases of poisoning in this country have been traced to contact with lacquered articles such as mah-jongg sets. Less closely related is the cashew nut tree, whose milky sap causes a dermatitis. Before being eaten, cashew nuts should always be roasted to destroy the irritant.

Attempts to isolate the active principle from poison ivy have been numerous. Most successful reagents in this work have been fat solvents such as absolute alcohol, acetone, ether, and oils. Hot 100 per cent alcohol makes a very powerful extract which can then be concentrated by distilling off the alcohol. In Japan in the years from 1906 to 1922, R. Majima concentrated the irritant of Japanese lacquer by use of alcohol followed by petroleum ether and isolated a yellow, extremely irritant oil which, because of its phenolic properties, he named urushiol. Similar work on poison ivy by G. A. Hill, V. Mattacotti, and W. D. Graham in this country resulted in the isolation in 1934 of the toxic principle, which they identified as urushiol. Subsequent work by many investigators has indicated that urushiol may be a mixture of four very closely related phenolic compounds. From other members of the cashew family new but related compounds have been isolated, and chemists have succeeded in synthesizing compounds of similar but not identical structure. All these compounds exhibit vesicant activity but of different intensity depending on their structure.

Typical structural formulae of the typical poison ivy compounds, urushiol, anacardic acid, and three-geranyl catechol, are shown in Fig. 1. It is apparent that as substituted catechols they all possess one or two hydroxyl groups (OH) in the benzene ring and a long, usually unsaturated, side chain coming off from the ring. The high fat solubility of these molecules, determined largely by the unsaturated side chain, would facilitate their penetration through the skin. The irritant action is believed to be largely related to the presence of hydroxyl groups in the ring, for when they are removed by oxidation or

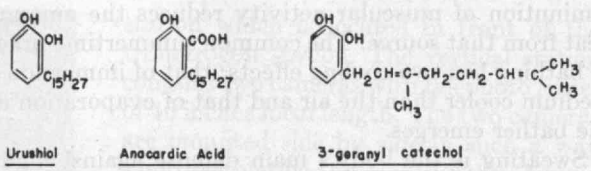


Fig. 1. Chemical structural formulas of typical poison ivy compounds in which the hydroxyl groups appear to be largely responsible for producing skin irritation.

are covered up by methylation the toxicity of the compound largely disappears.

Perhaps there is no bane equaling poison ivy in the production of quack remedies for treatment. Most of these have been absolutely worthless, and some have been actually harmful. Practically every compound known to the chemist, every plant extract familiar to the botanist, and every patent remedy relied on by the physician has been exploited. The layman and the witch doctor as well have contributed more than their share of remedies. It is only within the last 20 years that a more rational approach to the problem has been used. With the recognition of the irritant as a fat-soluble substance, it became obvious that poisoning after contact could be frequently prevented or at least abated through removing the poison ivy oil from the exposed skin with an effective detergent such as hot laundry soap solution or a fat solvent such as 100 per cent alcohol, ether, or acetone. This procedure is useful up to several hours after exposure, even after erythema and itching have appeared. In the Institute study of ivy poisoning this procedure is regularly used for removing potent extracts left on the skin until after the erythema stage has been reached; while it does not cure, it does check the case and retards the spreading. Contraindicated are all ointments containing oils and greases, which merely facilitate the spreading of inflammation.

Since the chemical constitution of poison ivy irritants has been identified as catechol compounds which are very easily destroyed by oxidation, it would seem that one way of taking the itch out of poison ivy is by treatment of the dermatitis by oxidizing agents. Most popular of these are 5 per cent solutions of either ferric chloride or potassium permanganate, which are applied directly to the inflamed skin.

Little can be done in the cure of poison ivy dermatitis after inflammation has reached its height. Remedies center around attempts to relieve, not cure, the itching. Local applications of baking soda, Epsom salts, or the familiar "whitewash" (a mixture of zinc oxide and carbolic acid in limewater) are helpful in alleviating the suffering. In severe cases once the skin has broken, infection may set in, retarding healing and calling for treatment similar to that for any infected wound.

Immunologists have followed quite a different approach to the problem. Basis for their research is the assumption that, like many bacterial toxins, poison ivy injected intramuscularly will produce immunity or, if inflammation has already begun, will effect cure of the dermatitis. This immunity does not result from repeated epidermal applications, for we found experimental successive applications made at Technology over a period of 10 months produced no immunity and occasionally even a hypersensitivity. This hypersensitivity is also evident in guinea pigs, which show no dermatitis at all until they have had several inoculations on the dehaired (*Continued on page 610*)

Variables and Constants in Tomorrow's World

In a World of Uncertainty and Change, Work, Love, and Worship Are Constants upon Which We May Build a Sound Life

By Rev. Carl Heath Kopf

Baccalaureate Address

YOU who are graduating from the Massachusetts Institute of Technology have lived through a period of constant change. From time to time various directives have altered your lives and changed the course of your living. You may, therefore, well ask: "Is there anything upon which we can depend for our future guidance? Is there anything midst all this change to which we can look for guidance as being forever the same?"

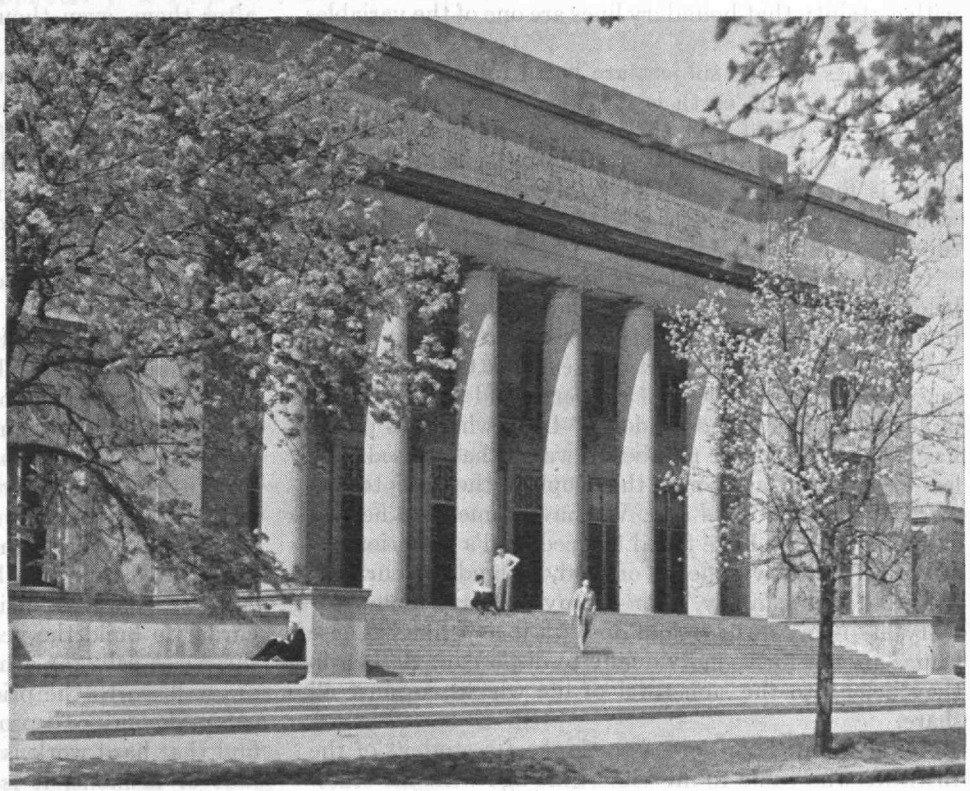
In a world of many variables there are several factors which are constant and by which we can guide our lives. In celebrating your graduation with you, I think of my own graduation exercises at Princeton 20 years ago. I think of the world of 1925 as has been described by F. S. K. Fitzgerald in his book, *This Side of Paradise*. At the time of my graduation we thought we did live on this side of paradise. It was a period of easy jobs, of fur coats prominently displayed on college campuses, of plentiful automobiles, and gasoline to run them. It was a bright but superficial period. We were so selfish that it was easy for us to adopt the attitude: each man for himself, and let the devil take the hindmost.

In contrast to the easy times of the middle Twenties, we now find that almost the entire world is in obvious chaos. Outwardly the world into which you go after graduation appears to be very unattractive, requiring the utmost of courage and faith from all of you. Twenty years ago the world seemed a much more attractive place in which to live, to be sure, but it was so only outwardly; inwardly the world was rotten and its philosophy superficial. Today we are inwardly sound.

Our political forms of government constitute one of the many variables in our lives. Certainly they are not among the factors which will forever remain unchanged. Indeed, they are all subject to change, and we have no assurance that present forms of government may not be altered. Various shades of socialism and communism have their battles with democracy.

We may feel that the boundaries between political or geographical regions are reasonably fixed, but a little examination will show that these too are variables. In times past, boundaries between two separate regions were capable of being well marked and had a certain significance. Today, however, we can no longer establish geographical boundaries, for there is the airplane which enables us to cross many boundaries in the course of a short space of time. But aside from all this, boundaries are really unimportant because they are, after all, artificial mechanisms of demarcation. I was only recently forcefully reminded of this.

While in Chicago one Sunday morning, I happened to be walking along one of the busy downtown streets. That is, ordinarily the street was a busy one with many people on it, but this Sunday morning it was unusually quiet with hardly a soul about. In the middle of the block I noticed a photographer taking pictures. He was busy setting up his camera on the curb of a section of the sidewalk which had been roped off outside of an entrance to a large bank. He seemed to be photographing the sidewalk, but the purpose of such a procedure was not evident, for there was nothing unusual about that section of the



sidewalk which had been roped off. Then I noticed that the man was photographing a small sign which had been attached to one of the ropes. This sign was about three feet off the ground, and it read: "Property of Banker's Trust Company, boundary line as of April 15, 1945."

In my conversation with the photographer I learned that the sidewalk was owned by the Banker's Trust Company but was also a part of a public thoroughfare. I was informed that to keep title to the sidewalk, which it owned but which the public used, the bank was required to rope off this section of the sidewalk once each year and, by means of the sign which claimed title to the sidewalk, establish proof that the bank had closed the walk to the public for at least 12 hours. "My job," said the photographer, "is to photograph the sign and the roped-off portion of the sidewalk once every year. The sign claims title to the sidewalk, and my photographs are proof that this claim of ownership has been made. If the public used the sidewalk regularly, without the bank's annual claim to ownership, the bank would lose title in several years."

I suppose it is reasonable to establish laws protecting property rights, and this was an example of the operation of such a law. But I could not help wondering who had owned the property before the bank. Apparently the bank had acquired the property from the original settlers who owned the land, and they in turn probably acquired it from the Indians, who were presumably the original owners.

You might ask whether I propose that the property be given back to the original owners — the Indians. I would hardly suggest this, even though the manner in which property was frequently obtained from the Indians does not make a pretty story.

We meet today in the fine state of Massachusetts, but I defy any of you to show me a Massachusetts Indian whose forebears originally owned this land. We can no longer distinguish between the original owners, and therefore boundaries have lost their meaning. We may say with certainty that boundary lines are one of the variables of life.

Thoughts on this subject are beautifully expressed in the Psalms: "The earth is the Lord's, and the fullness thereof; the world and they that dwell therein." God Almighty was the original owner of the land, and his claim is final. You would probably agree with me but would be quick to add that God would have a difficult time in staking out His claim.

It seems reasonable to conclude that the land does not belong to any of us alone but should be used for the benefit of all mankind. The trouble comes when we try to stake out the limits of our property, when we attempt to put a fence around some piece of property and say, "This is mine. Trespassers are forbidden." Look what this policy has led to; look at the number of wars it has caused. Unless we hold the land for all the people of the earth to use, we have missed God's aim. We have come to a hell on earth because we have failed to heed God's intention.

We need a new concept of God, of land, of our own lives. No man can say, "This is my property alone," or "My life is my own; I shall do with it as I like." These things are not for us individually to dispose of. Rather do they belong to the sum total of life which we must all share.

At this point I am forced to think of a student of the Institute who came to me some time ago with the statement that he didn't believe in anything. I asked him what it was in which he didn't believe. Probably in an attempt to shock me, he confided that he didn't believe in a divine power. My next question was to find out what course he had studied, and when I was told he had studied physics, I asked him, "If you have studied physics and do not believe in a divine power, how do you account for the exact laws of motion, for the mutual attraction of masses by gravitational force, for acceleration, and for the various forms of energy? How do you explain the various laws of electricity; the precision with which we can trace the paths of the planets; the laws of mechanics; or, for that matter, any of the many other manifestations of science which your physics has taught you?"

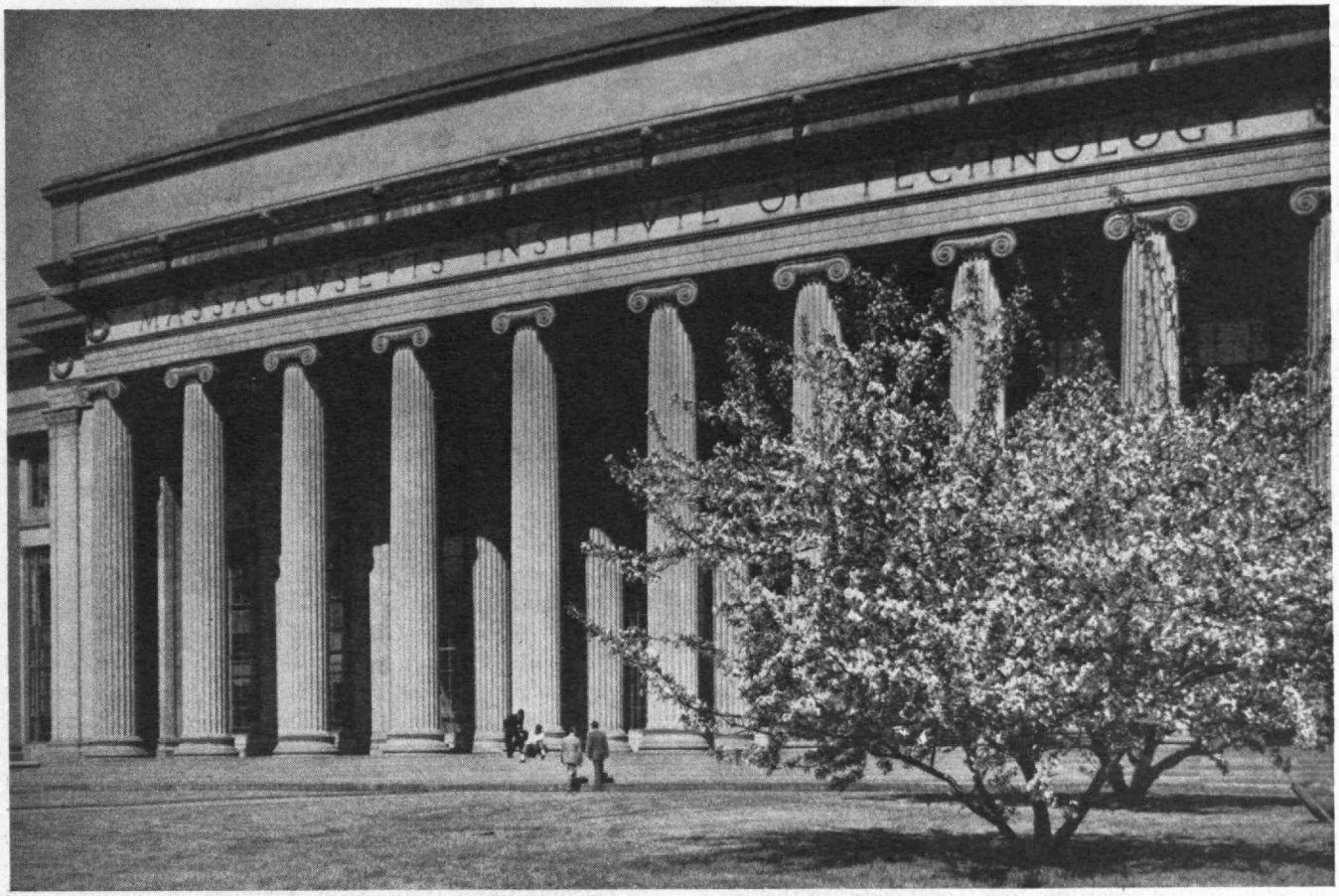
"Oh, I call that the substratum of energy," was his reply. I explained that his ideas and mine were fundamentally identical, and that after all it was merely the words upon which we differed; that his definition of "substratum of energy" and my definition of "God" were one and the same, except that I had the advantage of a much shorter name. It seemed to me much more convenient to sing that well-known song in my way — "Nearer My God to Thee" — than to follow the student's reasoning which required us to sing "Nearer My Substratum of Energy to Thee."

The earth is, in reality, the Lord's and so are our lives. But it must be recognized that we each have our own lives to live and that these must be lived for the common good. Sometimes parents have the characteristic of wanting to dominate their children. But this is not God's view of the purpose of children, who are entitled to their own thoughts, their own ideas, their own lives.

Several years ago a mother came to me with the request that I speak to her daughter. When I asked why I should talk to the daughter, I found that the mother wanted me to dissuade the daughter from marrying a missionary. It was the mother's idea that the daughter's place was at home with her parents where she would be able to look after them, even though they were both in the best of health. "Do you mean you want me to ask your daughter to give up a happy marriage and an opportunity of serving as God inspired her merely so that she can stay at home for the benefit of her parents?" I asked. "As a man of God, I would be false to my teachings if I asked your daughter to do anything but what she felt she should do." Here is another kind of boundary line which we see is a variable.

But having spoken of a number of variables which are known to all of us, let us stop to consider some constants in our lives. What is it upon which we can really depend in building our lives? I think the first of these constants upon which we can depend is work, for each and every one of us should do an honest day's work for an honest day's wages. There is no substitute for honest labor. A successful life requires that you perform a full day's work in a full day's time.

War is an evil which destroys everything. The destruction caused by war will call for long, hard sacrifices. We can win — we are winning — the war, but it will be harder to build the peace after the war. The building of the peace calls for a healthy, sound life. But the results are well worth the price, for it is only by labor that we can make any real progress and gain real happiness. We find that hard work is the first constant. Not subject to fads or fashions, it is eternal. (*Continued on page 606*)



Civilian Training for Peace

Indispensable to Military Preparedness as a Factor in Maintaining Peace is a Sound Program of Civilian Education

By D. L. Madeira

COMMENCEMENT ADDRESS

MAN has devised a great variety of techniques to influence people and regulate their conduct. On the one hand we have the methods of peaceful persuasion, and on the other, the techniques of coercion. They represent divergent approaches to the universal problem of influencing people — influencing them to conform to various standards that are deemed to be desirable. Much has been said and written about the respective merits and shortcomings of persuasion and coercion as means of achieving desired goals. With no desire to become embroiled in any such arguments, I am going to tell you a story which bears some relationship to the subject.

Little Johnny and his mother went to a department store one afternoon and wound up in the toy department. There Johnny promptly got on a tricycle and proceeded to ride about for well over an hour. His mother, meanwhile, had become somewhat impatient and was anxious to be on her way home, since closing time for the store was fast approaching. Johnny, however, was not to be persuaded, and his mother did not wish to use anything stronger than moral suasion, because she had been vastly impressed by various articles on child psychology which recommended the soft approach. Finally the floor manager, perceiving her helplessness and distress, inquired if there was anything that he could do to help.

"No," said Johnny's mother, "there is nothing that I can do unless Johnny himself decides to go home."

"Well, madam," said the manager, "we have a very successful child psychologist on our staff. Perhaps he could persuade Johnny."

"Why, that will be just wonderful!" said the harassed parent.

So the psychologist was summoned. He went over to the other end of the floor where Johnny was still riding his tricycle in circles. He stopped the little fellow and spoke earnestly to him for a few moments. Almost at once Johnny hopped off the tricycle and hurried to his parent's side.

"I'm ready to go now, Mother," he announced.

Johnny's mother happily prepared to depart, but as an

afterthought she approached the psychologist and said, "I wonder if you would tell me for future guidance just what arguments you employed with my little boy. It really was wonderful how quickly you coaxed him to change his mind."

"Oh, that was nothing, Madam," said the expert. "I just went over to your boy and said, 'See here, you little devil, get down off that tricycle and get out of here or I'll give you a good drubbing!'"

You may take my word for it that similar coercion must be employed to get a naval officer to make a commencement or any other type of address. On my part, however, I hope that it will not take coercion to induce you to hear me out. I have no desire to be catalogued as a member of the rapidly declining Fascist class. Rather, I would prefer to be classed as a man of good will. I accept without question that, where freedom and individual dignity are cherished, peaceful persuasion should, wherever possible, become the order of the day. Where mutual understanding prevails, where willingness to sacrifice for the general good exists, coercive techniques need be employed but sparingly. On the other hand, stored away for emergency use there must be some power — either moral, mental, or physical — in readiness to be called forth when peace and good will are threatened.

Standing alone, the word "coercion" has, of course, an unpleasant connotation, especially today. When we hear the word we think of force used to attain illegitimate goals. Yet coercion retains its inoffensive meanings as well. Our religious beliefs, for example, use coercion to compel us to live according to a moral code. In this case, to be sure, the fear of a higher force is brought to bear rather than the fear of actual physical discomfort, but it is coercion nevertheless. So when I use the word coercion I am not thinking of it in terms of the methods used by the Germans and Japanese in dealing with their prisoners. Rather, I use it to express a legitimate form of human behavior which, although it can be used in illegitimate ways, is nevertheless thoroughly acceptable and, to my mind, vitally necessary under some conditions.

My acquaintance with coercion, and probably yours, began at home. No doubt I felt discriminated against on various occasions, but, at the same time, the restrictions placed upon me almost certainly made life safer and more pleasant for the majority of people in my little world. I am not admitting that I was like little Johnny of my story, but there are many little Johnnies about us today. Some of them are individuals, some are organizations, and some are nations.

Coercion, through law, is the technique of the state. Would you recommend the immediate abolition of its tools — the police forces, the judges, the jails? The morality of nations can be no better than the morality of the individuals composing those nations. The moral code of a nation may be as low as that of its lowest citizen, if that citizen has connived his way into a position of power. When this happens, coercion becomes the order of the day. Just as we must force the individual to regulate his conduct for the common good, we must use coercive techniques to induce immoral and troublemaking nations to fall in line, to conform to the pattern of international morals and conduct.

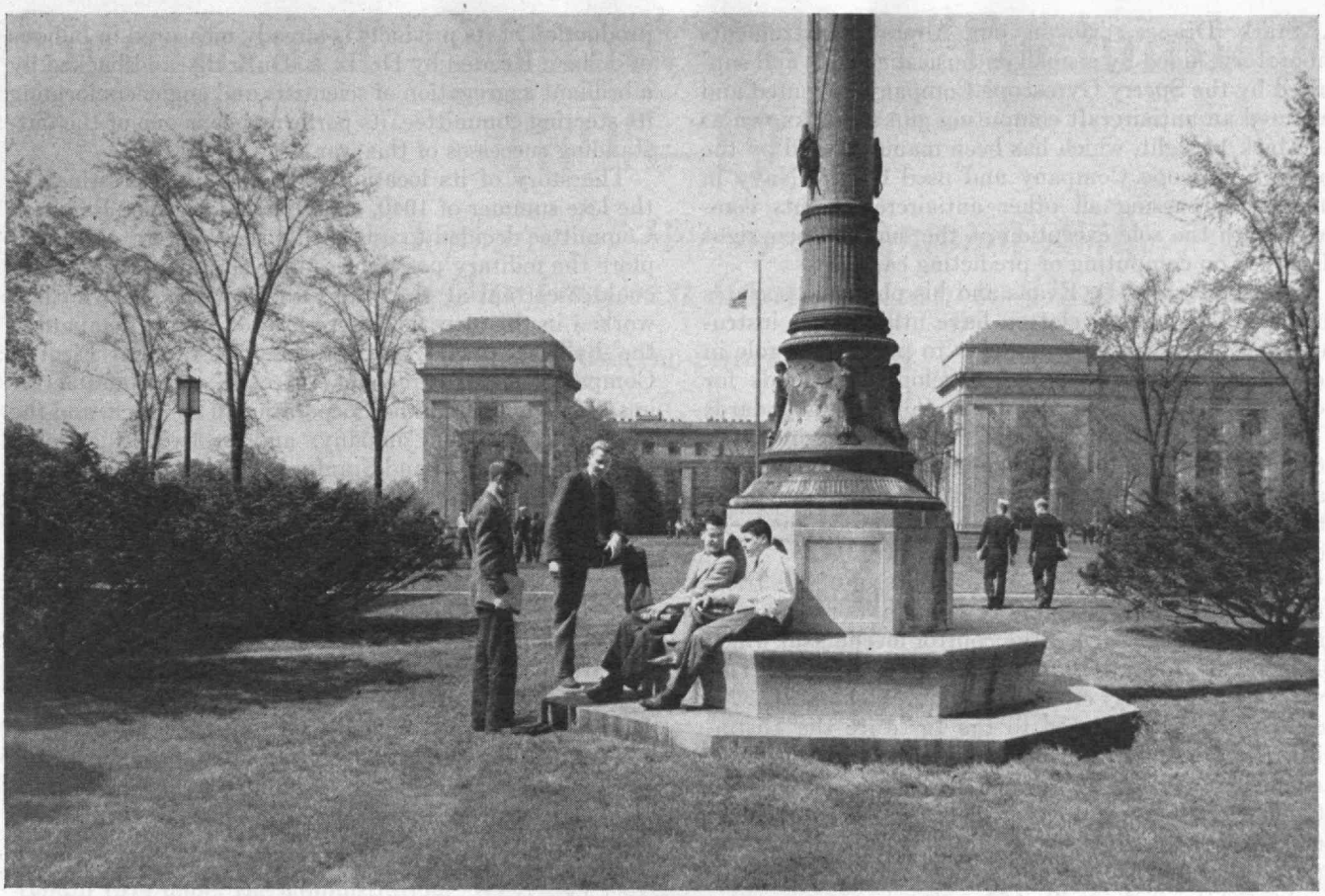
If I dared to become philosophical, I might argue that there is an element of coercion in every persuasive act. I feel certain that everyone will agree from his own experience that persons in positions of power are usually more persuasive than common mortals. In situations where physical force is a possibility to be considered, individuals possessing this force will subconsciously exert it when employing what is to them a purely persuasive technique. In this sense, coercion and persuasion are inseparable. Thus we find that all about us the coercive technique is necessary to co-operative living. We must face it as a fact. Although it employs all nature of forces to achieve an end, the method is not in itself necessarily evil. It is only when the goal of coercion is immoral that the coercive technique becomes immoral. When the goal is necessary to the common good and when simple persuasion fails, then coercion must be substituted.

On an international level, coercion has been the technique universally employed by strong nations to impress their will on weaker nations. The power used has been either the threat or the use of military force. There is, at present, no international force available to enforce international morality. Although illustrations of international co-operation and limited confederation are many, there has never been an instance in which an actual transfer of military power from individual states to an international community has taken place. In order to be realistic as a nation and until an international police force is created that can enforce an accepted pattern of behavior, we must either accept the code of a nation militarily stronger than ours, or we must make ourselves strong enough to project our own pattern of international conduct upon others.

We have already been forced to do the latter in the case of Germany and Italy. Soon, I hope, the Japanese will find it expedient to accept a different standard of international behavior. Why have we taken this course as a nation? Because we know from experience that the so-called Axis powers are bandit nations. We have learned that if we are to maintain the democratic way of life which is dear to us, we cannot ignore the coercive technique. We have seen that we must maintain a military organization strong enough to employ coercion whenever the necessity arises. We can hope and pray that the need will never come. But it has arisen before, not once but several times; we may not dare to be unprepared for it again.

By no means does this indicate that we desire or invite war. As a member of the military forces I have seen two wars. Let me assure you that I, in common with most other professional military men, dislike war in all of its aspects. I have seen too much of its horror and futility to advocate action that would in any way tend to promote future wars. But I am a firm believer in security. Of necessity I have done considerable war traveling and have had contact with many peoples at war. The moral level of a number of nations is not such that we dare abandon our national defenses.

In the past, some have advocated that our ultimate goal in dealing with other nations is to apply the Christian doctrine of turning the other cheek when we have been slapped on one. I agree that before using coercive measures we should explore all methods of peaceful arbitration in any controversy that may arise. However, having viewed the recent spectacle of blitz war, I have been forced to the conclusion that the meek and lowly are not too well thought of by their conquerors, nor do they prosper. The only earth they inherit is six feet of soil, patted in their faces with a shovel. They may not hope for Christian treatment from (*Continued on page 588*)



Prerequisite to Freedom

The Discipline of Youthful Training Does Not Mean Subjection of the Individual but Adjustment to Social Environment

By Karl T. Compton

VALEDICTORY ADDRESS

IN congratulating the members of the graduating class on the successful completion of their programs of study at this institution, it may seem superfluous for me to make any comments with regard to the nature and accomplishments of the institution of which you have this morning become alumni. You have seen this institution from the inside as students and to some extent also as investigators in the borderlines of science and of advanced engineering art. You have completed an educational program which has extended the boundaries of your knowledge and at the same time has disciplined your minds in the logical, constructive methods of exact science. You have all been more or less aware that the Institute has been very active during your stay here on certain projects whose immediate objective has been a contribution to our national war effort rather than educational in nature. Let me therefore take this opportunity to tell you something more than has yet been disclosed about this other side of the Institute's program during these war years.

Now that V-E Day is past, it is permissible to lift a few corners of the shroud of secrecy which has covered those aspects of M.I.T.'s war work outside of the very substantial educational programs for Navy V-12, Army Specialized Training, Army Air Force Meteorology, Radar School, and several other specialties.

Among the 200 or more war research jobs performed by the Institute, the following are illustrative examples. There are many others equally or even more important which in due course will be disclosed.

When the rubber crisis became imminent, and it was clear that our nation would have to depend on the new synthetic rubbers, there had not been developed any successful method for reclaiming synthetic rubber. The Midwest Rubber Company, largest rubber reclaimers, turned to M.I.T. for a program of research and development in this field. Ernst A. Hauser, Associate Professor of Chemical Engineering, and his colleagues in that department were eminently successful and have turned over their process to the rubber reclaiming industry. Professor

C. Stark Draper, '26, in our Aircraft Instruments Laboratory, aided by a small enthusiastic group and supported by the Sperry Gyroscope Company, invented and perfected an antiaircraft computing gun sight, known as the Mark 14 sight, which has been manufactured by the Sperry Gyroscope Company and used by the Navy in numbers surpassing all other antiaircraft sights combined, with the sole exception of the simple open sight which has no computing or predicting capacity.

Professor Robley D. Evans and his physics associates who run the M.I.T. cyclotron have utilized this instrument and its radioactive products to play a key role in the co-operative program for developing methods for preserving whole blood and maintaining the standards of such blood. This work has been significant in laying a technically sound basis for the great blood donor program and the use of whole blood to save hundreds of thousands of lives among the war wounded in every theater of war.

Gordon S. Brown, '31, Associate Professor of Electrical Engineering, heading a sizable group in his Servomechanisms Laboratory, designed the control mechanism which points all the Army's 40-millimeter (Bofors) guns. This work was especially cited by Major General G. M. Barnes when he presented to the Institute the Distinguished Service Award from the Army Ordnance Department.

Certain special facilities of the Institute, with their operating staffs, have been functioning steadily day and night all through the war on war jobs. For example, the Wright Brothers Wind Tunnel group have, since five years ago, dropped their fundamental research program and have worked for a large number of aircraft manufacturers to perfect the aerodynamic designs of the newest types of military aircraft.

Similarly, a striking story could be told of the war contributions made by our Center of Analysis and its assembly of mechanical and electrical automatic computing devices. By far the most powerful and sophisticated computing device ever built is one whose existence or description has not been publicly announced. It is an electrically operated differential analyzer, built with the aid of a substantial grant from the Rockefeller Foundation. As one expert, not on the M.I.T. staff, expressed it (with some exaggeration), "It works out the Navy's ballistic tables in spare time after five o'clock." This is the latest, but by no means the last, of the remarkable computing devices conceived by Dr. Vannevar Bush, '16, and his colleagues, Professors Wiener, Caldwell, Taylor, Brown, and others. They solve at high speed problems of arithmetic, algebra, differential and integral equations, statistics, and rapid selection.

The above are but a few samples of the types of war research which M.I.T. has carried on during the past five years and which are all distinctively M.I.T. performances. We have had another great war activity which has not been exclusively an Institute affair, but which has been a co-operative effort by scientists and engineers loaned from several hundred colleges, universities, and companies. I refer to the M.I.T. Radiation Laboratory, operated by the Institute under contract with the Office of Scientific Research and Development. This is the largest research organization, so far as we know, in the history of the world. Its aggregate five years' budget runs to many millions of dollars, but the manufacturing production of its products is already measured in billions of dollars. Headed by Dr. L. A. DuBridge and backed by a brilliant aggregation of scientists and engineers forming its steering committee, its performance is one of the outstanding successes of this war.

The story of its location at M.I.T. is interesting. In the late summer of 1940, the National Defense Research Committee decided to establish a small laboratory to explore the military possibilities in a new art. So far as we could ascertain at that time, the only people who had worked in this new field were located in five companies, the Bell Telephone Laboratories, the General Electric Company, the Westinghouse Electric and Manufacturing Company, the Radio Corporation of America, and the Sperry Gyroscope Company, and in two educational institutions, M.I.T. and Stanford University. One expert from each of these organizations, together with two or three others at large, was selected to steer this new enterprise.

It was then thought that about 11,000 square feet of floor space would be adequate, for there was then not the remotest suspicion of the potential ramifications of this new art. A location near an airport and near a large body of water was essential. Attempts to find laboratory space near Washington failed, one after the other. Finally, just before authorization of the job was due to be made by the National Defense Research Committee, the chairman of the committee called up our Executive Vice-president, J. R. Killian, '26, to see whether M.I.T. could help them of out the jam by making 11,000 square feet of floor space available and getting permission to use part of the National Guard hangar of the East Boston airport. This small beginning of an unsuspectedly great enterprise makes me think, in more ways than one, of the "small cloud, the size of a man's hand," which preceded the deluge in answer to the prophet Elijah's prayer for rain.

During 1942, when the German submarine menace was at its height and even our coastwise shipping lanes were under continuous attack, the Army Air Forces initiated patrol and attack by aircraft equipped with radar. The planes used in this first program were fitted with radar equipment designed, built, and installed by the M.I.T. Radiation Laboratory. This, as much as any other one thing, marked the turning point in the antisubmarine campaign. Soon this type of air patrol, co-ordinated with ships, became standard practice by the Navy.

The Eighth Air Force planned continuous strategic bombing of German war industrial targets beginning in the late fall of 1943. But during winter and spring the weather over Germany is such that only about four days a month could be expected to have skies clear enough for visual bombing. The commanding general sent a number of experienced bomber crews to Boston. Here radar equipment designed and constructed in the Radiation Laboratory was being installed in the group of heavy bombers destined to be the Eighth Air Force's "pathfinder squadron." The laboratory personnel then worked with these crews in their initial training in use of the equipment. The pathfinder squadron then flew to England and led and directed the strategic bombing operations over Germany during the period from November, 1943, to the middle of February, 1944, at which time commercially built equipment began to be introduced. However, equipment built at the Radiation Laboratory continued the operations to the (*Continued on page 600*)

Significant Contacts with Technology 1895–1945

Leading to the Development of Men of Exceptional Ability, Quality of Education Is Our Greatest Contribution to Democracy

By Gerard Swope, '95

Alumni Day Banquet Address

THIS year is the 80th anniversary of Technology's first class. Then, in 1865, it had 72 students and no Alumni.

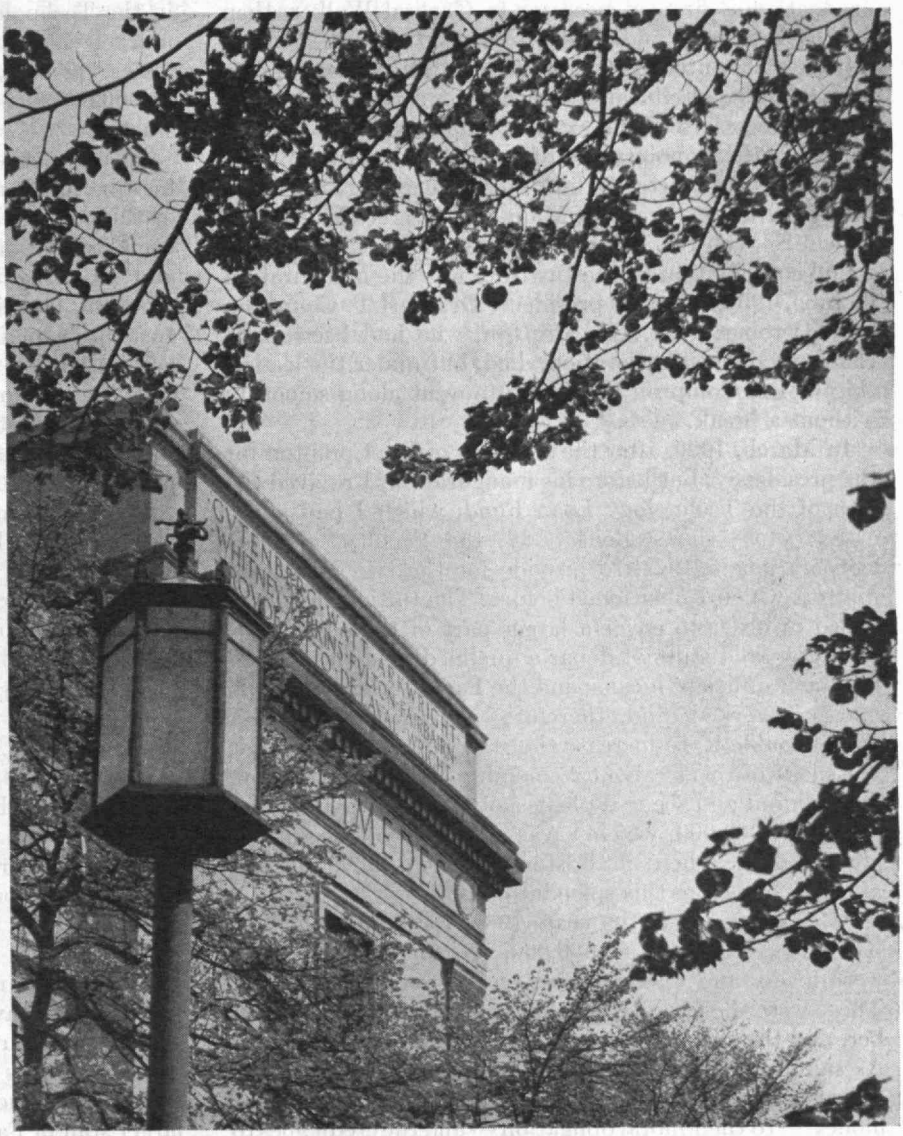
When the Class of 1895 was graduated, there were less than 1,200 students and about 1,500 Alumni. In the days before this war, there were about 3,000 students, and today there are 37,000 Alumni in every line of constructive enterprise — in industry, business, engineering, the professions, scientific research, government, and the armed services. Now, 50 years after graduation, what are the significant facts of my contacts as an Alumnus with the Institute?

I remember when I was elected an alumni term member of the Corporation in 1914 under the administration of Dr. Maclaurin. I was full of ideas as to how to improve the curriculum, the result of my experience of 20 years after leaving the Institute. I thought I had found that the training at the Institute was too specialized and technical; that it should be broadened along economic and cultural lines; that even engineers, besides dealing with materials and laws of physics, had to deal with men. I soon found that was a difficult and complicated subject and one on which the final word has not yet been said and, no doubt, never will be.

During this period, the site in Cambridge was selected, the plans laid out, and the present buildings started. Unfortunately, in January, 1920, Dr. Maclaurin died, and then there was an interregnum until Dr. Stratton was made president.

I was elected to life membership in the Corporation in 1923, shortly after Dr. Stratton took the presidency. Several matters impressed me then; among them were the increasing financial burden (as student fees paid only about one-half of the cost of education) and the very modest salaries of the Faculty and the great load each was carrying, leaving little time for original creative work and research.

Early in 1925 I went to England, and while there I visited the University of Cambridge and met Sir Ernest Rutherford and Sir J. J. Thomson. We had long discussions on the essential differences between American and English education in science and engineering. Rutherford made the sweeping statement, "In the training of scientists and engineers the average of your graduates is far above that in England." But then he said, "Your graduates cannot touch the graduates of our honors courses, which are composed of about the first quarter of the class.



These are the men to whom we direct our attention. We don't pay much attention to the other 75 per cent of the class, although they do get something from the atmosphere."

I was much impressed and thought if we could keep our standards of scientific and engineering education for the average student just as high as or higher than in the past and then form an honors course, we might retain our high average for all students and give the men of exceptional ability an even greater opportunity by not holding them back to the average of the group. On my return, I spoke of this before the Corporation and was warmly supported by Dr. Lowell, then President of Harvard, and, of course, a loyal life member of our Corporation. Soon after, the Visiting Committee of the Department of Electrical Engineering and that of the Department of Physics made a report on this question, and honors courses were established and graduate fellowships offered to the outstanding members of this group. These exceptional men have given a good account of themselves in engineering and science in the 19 years since their graduation.

In 1926, I was elected to the Executive Committee and soon began to think of obtaining, during Dr. Stratton's lifetime and presidency, a successor, who, at the proper time, could become president without the interregnum and difficulties already experienced three times since my graduation — first, a successor to General Walker, then to Dr. Pritchett, and finally to Dr. Maclaurin. Similar to corporate enterprises in industry and business, it is a good practice in educational institutions to give thought to the successors of the executive officers. That idea resulted in the appointment of a small committee of the Executive Committee to find such a successor, the other members being Charles T. Main, '76, Everett Morss, '85, Edwin S. Webster, '88, and Francis R. Hart, '89, whose signal contribution to the Institute was the inauguration in June, 1930, of a new president, Dr. Karl T. Compton.

In October, 1931, Dr. Stratton, who had been made chairman of the Corporation, died, but under the leadership of Dr. Compton the Institute went along smoothly without a break.

In March, 1930, after the selection of Dr. Compton for the presidency, but before his inauguration, I revived the idea of the Technology Loan Fund, which I had advocated before the student body, the Faculty, and the Corporation in 1923, to provide for the two important matters which I mentioned before: The tuition should be raised in order to cover a larger part of the cost of the education and still not debar a qualified student who did not have sufficient means; and the Faculty was underpaid and overworked, and, therefore, increased tuition fees would enable us to increase the staff and raise their pay.

I spoke of this to about 25 members of the Corporation and Alumni and secured pledges over a 10-year period of almost $5,000,000, which I was able to announce at the alumni dinner here in Boston in June, 1930, my last appearance before this splendid body.

After payments in the years 1930, 1931, and 1932, we had collected nearly $1,500,000. No further collections were made, and fortunately no more were ever needed. These were the trying days that some of you will remember, and the subscribers were all delighted to be relieved. As significant as that may be, it is really the least significant. It is the response of the men who borrowed the money — to their moral obligation — and the credit goes to the men individually and to Dean H. E. Lobdell, '17, and his staff for their sympathetic interest in the men after graduation. The records that these men have made are good, as you might expect from men who are serious-minded, who borrow to obtain their education, and who regard their moral obligation so highly. They will make good citizens and great Alumni, and I look forward to seeing some of them take an active part in the development of the Institute, first as alumni term members of the Corporation and then as life members, or in other ways.

In this period of 15 years to December 31, 1944, loans amounting to almost $1,900,000 have been made to nearly 2,600 men. Remember that this entire amount was paid to the Institute and could not have been, nor could these 2,600 men have come to Technology, except for the Loan Fund. This is an average of over $125,000 a year, or a higher average than the Alumni Fund has yet attained, and an average of $50 a man for each year over this entire period. Over 1,600 men have paid off their loans amounting to over $1,500,000, including interest of almost $200,000. Notes now outstanding are less than $600,000. The losses in this entire period have been somewhat over $2,000, or approximately one-tenth of 1 per cent of loans made; the loans in arrears are less than $39,000, or about 2 per cent of loans made; and the interest paid is nearly five times the losses and amounts in arrears. The total in the Technology Loan Fund, including investments at market value and loans outstanding, but after deducting losses, arrears, and expenses, is now approximately $1,900,000 — $400,000 more than when the Fund was started.

In this period the administration of the Institute has become much more democratic by enlisting the interest of the student body (through the Institute Committee), the Corporation, the Faculty, the Alumni, alumni clubs, and class organizations. It is greatly to be desired that all of these, especially the Alumni, because of their post-Institute experience, take an even greater interest in the administration and development of the Institute. In 1907, the system of alumni term members for the Corporation was adopted following a very serious and critical time in the Institute's career. Now the Corporation is predominantly Alumni. Out of 58 members, 41, or 70 per cent, are Alumni, almost all originally chosen by the alumni body. In 1934, the alumni participation in the administration of the Institute was further extended to have alumni representation appointed to each Visiting Committee on nomination of the Alumni Association.

The alumni body is now 37,000. Its estimated annual income or contribution to the productivity of our country is a quarter of a billion dollars — the only unit that we use these days. The contributions to the Alumni Fund this year were $150,000, but this is only .06 of 1 per cent of the income of the Alumni, and a large part of this is contributed by the government, which allows 15 per cent of a net income for gifts to educational institutions free from tax. Furthermore, only about one-quarter of the Alumni contributed to the Fund, and the average contribution was about $15. All this shows great opportunity — first, by raising the number of contributions, and second, by increasing the average amount contributed. If the Alumni should contribute each year an amount equal to the students' fees, this would pay for the academic education of the students and leave the income from investments for a larger staff of Faculty better paid (*Continued on page 608*)

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

Transition to Optimism

With the European War Ended and Fighting in the Pacific Going Well, Confidence and Renewed Hope Mark Alumni Day 1945

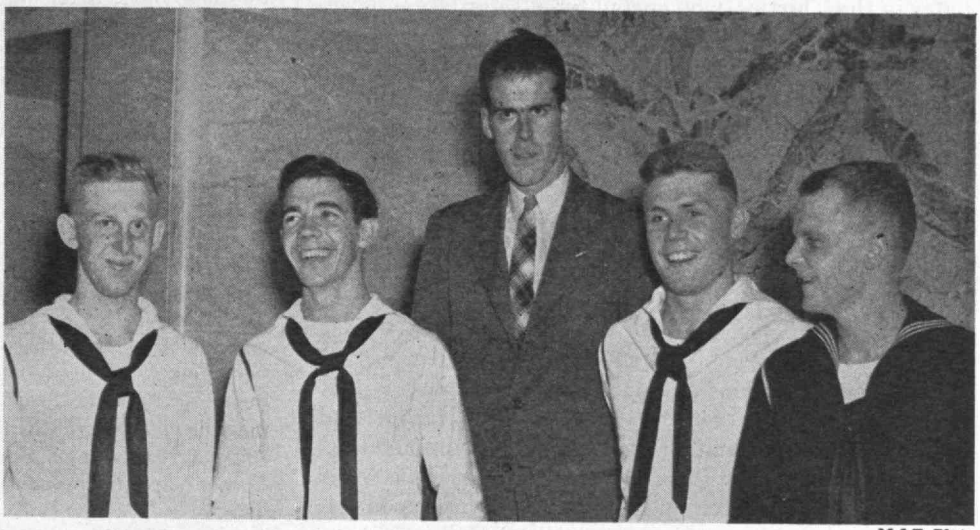
WAR'S imprint was unmistakably evident on Alumni Day 1945 in the reduced attendance at Class Day exercises and particularly at the Alumni Banquet which, with an attendance of 825 Alumni, Alumnae, and honorary members, represented a 25 per cent decrease from the 1,100 who were present last year. Travel restrictions, making it imperative that Alumni Day 1945 be strictly a local affair with the sending of announcements limited to those living in metropolitan Boston, brought a disappointment to many who would have welcomed the opportunity to be present at another of the celebrated reunions on Boylston Street. But whatever disappointments there were, were borne with good grace and complete understanding.

Those taking part in Alumni Day activities carried with them full realization of the task still confronting this country in its conflict in the Far East — a realization that was tempered with new hope, confidence, and optimism for the world at peace. Those fortunate enough to be able to attend Class Day exercises, partake of the Alumni Banquet, and watch their sons and daughters in graduation ceremonies, signalizing the completion of the first full college curriculum under the program of accelerated instruction, were also privileged to learn publicly for the first time some of the many ways in which research, staff, and Alumni of M.I.T. had made important contributions to the winning and shortening of the war.

Beginning with the events of Class Day on Saturday, June 23, and extending through the baccalaureate on Sunday, and culminating in the commencement on Monday, June 24 and 25, all activities were characterized by a theme freely expressing a transition to optimism. This theme is succinctly expressed by the titles of commencement addresses, "Civilian Education for Peace" and "Prerequisite to Freedom," which together convey a message of their own quite aside from that of the individual addresses. To this group must be added the baccalaureate sermon with its mathematically reminiscent title, "Variables and Constants in Tomorrow's World," delivered by the Rev. Carl Heath Kopf in Walker Memorial. Captain D. L. Madeira, U.S.N., delivering the commencement address, "Civilian Training for Peace," stressed the need for an adequately trained civilian populace, co-operating with the military personnel for the maintenance of peace — by coercion if necessary. In lifting the veil of secrecy from certain of the Institute's war activities in his valedictory address, "Prerequisite to Freedom," Dr. Compton was able to disclose the proud part which the Institute has played in research and which in no small measure has been a factor in the successful prosecution of the war. At the same time, the message was clearly conveyed that personal discipline is a prerequisite to freedom and is indispensable in a democracy. Gerard Swope, '95, retired President of the General Electric Company, recounted significant contacts he had enjoyed with the Institute during the last five decades and reiterated the need for devoting more time and attention to the development of exceptional students. It is The Review's privilege to be able to present these addresses elsewhere in this issue. In addition, highlights of President Compton's annual report to the Alumni, as delivered at the Alumni Day Banquet, will be found in a later portion of this section.

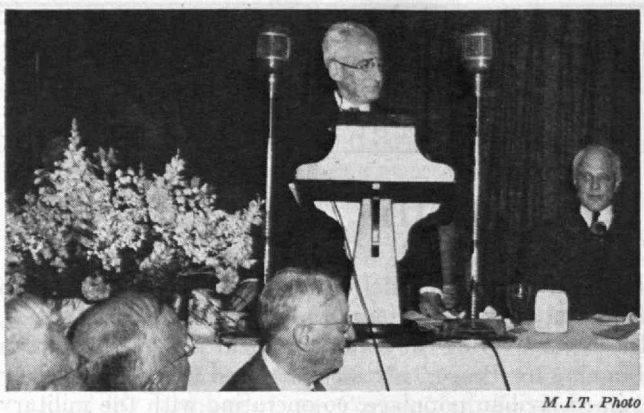
Class Day Exercises

ON the afternoon of Saturday, June 23, Class Day exercises were held in the New England Mutual Hall, site of Boston Tech on Boylston Street. Parents and friends of the graduates, as well as Alumni, were welcomed back to the historic site by Harold Thorkilsen, 6–45, chairman of Senior Week. They witnessed the transfer of the class ring from Kirk Drumheller, President of the



M.I.T. Photo

Officers of the Class of 6–45, in the usual order, are David P. Flood, Permanent Secretary; Kirk Drumheller, President; Charles F. Street, Beaver Orator and marshal; David A. Trageser, first marshal; and James F. Brayton, second marshal, at the New England Mutual Hall where Class Day exercises were held on June 23.



M.I.T. Photo

Gerard Swope, '95, for many years active as president of the General Electric Company, addresses those attending the Alumni Banquet. Recalled were some of the many significant contacts he had with the Institute as a member of the Corporation during the half century since his graduation. Dr. Compton awaits his turn to announce gifts of the Class of 1895 and to lift the veil of secrecy on activities at the Institute in his annual report.



M.I.T. Photo

Under the scrutiny of Lieutenant Colonel John C. Dunbar, '25, Norris G. Abbott, Jr., President of the Class of 1920, is backed by the moral support of Harold Bugbee, '20, and Percy Bugbee, '20, as he announces the 25-year class gift of war bonds and the formal adoption of Frederick G. Fassett, Jr., as honorary member of the Class of 1920. Winthrop Cole, '87, and Frank E. Shepard, '87, are in the foreground, with Kirk Drumheller, 6–45, at extreme right.

Class of 6–45, to Herbert J. Hansell, President of the Class of 2–46, listened to an address from Alfred P. Sloan, '95, as representative of the 50-year class, and a dialogue skit by the Bugbee twins — Harold and Percy — watched the presentation of the play by the Class of 6–45, who petitioned for admission to the Alumni Association, were spectators to the presentation of a check covering a portion of the class gift which Dr. Compton accepted, and learned the history of the Class from its Beaver orator, Charles F. Street, 6–45. In concluding these exercises, Raymond Stevens, '17, President of the Alumni Association, presented the class banner to Kirk Drumheller in token of the acceptance of the Class into the Alumni Association.

Speaking for the 50-year class, Alfred P. Sloan, President of the Class of 1895 and chairman of the board of General Motors Corporation, delivered an inspiring address to the assembled members of the graduating class and their guests. Pointing out that their years of study at the Institute had given them something which could never be taken from them, Mr. Sloan held high hope for unusual opportunity for the Class of 1945. Unlike graduates in the Thirties, who encountered retardation of scientific progress because of the depression, present-day graduates go forth in an era in which there is universal recognition of the need for scientific achievement. In contrast to the time when he was graduated from the Institute, Mr. Sloan observed that we now have vast laboratories and well-organized technical personnel for research activities. Postwar business expansion should provide ample opportunities for those with technical training.

Class of 1920 Dialogue

NOT to be outdone by Mr. Sloan's half century of experience since his graduation from Technology, the Class of 1920 had twin representatives, Harold and Percy Bugbee, on hand to speak with the combined experience, since their student days, of 50 years. In a witty dialogue, thoroughly enjoyed by the audience, good advice, sprinkled with a liberal seasoning of humor, was passed on to the Class of 6–45 by the 25-year class. On unexpectedly meeting one another at Class Day activities, the Bugbees engaged in the following dialogue:

Percy Bugbee. Pardon me, but haven't I seen you somewhere before?

Harold Bugbee. Your face looks familiar, too. You aren't that noisy fellow that was at the Statler last night, are you?

P.B. I've got it! You were at the 25-year class luncheon this noon. You're Bugbee, '20, M.I.T.

H.B. Right! Now I remember. I used to sit next to you in class, years ago. *You're* Bugbee, '20, if I'm not mistaken. Pardon me for not recognizing you right away, old timer, but, after all, 25 years is a long time — a generation, when you stop to think of it.

P.B. Yes, it certainly is a long time, but you haven't changed as much as I thought you would. A trifle thin on top, of course, and what there is — pretty white. Still, I ought to have recognized you.

H.B. And me, you. After all, your chest has only slipped down a foot or so, and you can't have put on more than 50 pounds.

P.B. Never mind that. Tell me, what are you doing here?

H.B. Why, don't you know? I'm the class secretary, and because of my high office I have the honor of greeting the Class of 1945 in behalf of the Class of 1920 and of helping to see that they get off on the right foot as Alumni, me and Alfred Sloan.

P.B. Oh, so that's it. Well, it's a pity they couldn't dig up some member of the Class who'd set a more inspiring example for these boys. After all, they expect to get an idea of where they'll be 25 years from now — or 50 years from now, like Mr. Sloan. Look at you! Not even an engineer, let alone the head of some great industry like General Motors. If I remember rightly, the minute you escaped from the Institute you promptly repudiated all that marvelous instruction in chemical engineering by going into the advertising business. Now, why didn't they pick me, for instance?

H.B. You! How do you get that way? Just because you chase all over the country and get your name in the papers once in a while as head (or figurehead, anyway) of the National Fire Protection Association, don't get the idea these fellows ever heard of you. If it's a matter of impressing them with the glory and achievements of the Class of 1920, we could have trotted out one of our five generals or five admirals or eight Navy captains, including Edward Ellsberg, the classmate who has done such magnificent work clearing damaged ports and raising sunken ships, or captains of industry like Chuck Reed, President of Forbes Varnish Company, sitting out there to see his boy graduate, or Ed Farrow, Vice-president and production manager of Eastman Kodak, or —

P.B. Hold on. Let's not argue about our qualifications. We're here, and they're stuck with us, and Charlie Locke said to make it snappy, so let's try and think of something constructive to

tell these fellows. After all, you know, we were both Course XV. Nobody would expect us to be engineers.

H.B. True enough. I wish we had time, though, to tell them what it was like to be in the first class that was here on the Cambridge side of the river all four years. No beautiful greensward then, just pebbles to get in your shoes. No trees, no shade. It looked even more like a brain factory in those days. And World War I was just coming up. Those were hectic years, too. But, speaking of advice, if these boys weren't all through, there's one thing I could recommend, and that is to go to the same classes with an identical twin. Remember how we used to sit together so that whichever had studied the night before could jump up when the Prof called on "Bugbee." Funny, how long it took some of them to get on to that.

P.B. That's right. It sure was a big help when I was busy managing the Tech Show.

H.B. I should say it was. Why, as I remember, you were the only show manager who ever got through in four years — all due to the fact that I did your work. But I don't suppose these fellows know there was such a thing as a Tech Show. It was big business in those days — a regular musical comedy, book, music, orchestra, ballet, chorus gals — all the work of undergraduates, and a bang-up job they did, too.

P.B. Hope it's revived as a Technology activity some day. But let's stop reminiscing and try to think of something "constructive," as you say, to tell this fine-looking body of men. Isn't there anything in your so-called career that might be worth telling them?

H.B. Well, I was going to refute that crack of yours about repudiating my Technology education by going into the advertising business. It happens that most of my clients manufacture technical or industrial products, so an engineering education wasn't such a bad background. As a matter of fact, I've never regretted it for a moment, and I believe that's true of all our classmates who have gone into all kinds of activities other than strictly engineering — insurance, real estate, writing, farming, or what have you. So far as I know, they all put a high value on their years here at M.I.T. They were taught how to work and how to think straight; that's mighty valuable whatever you get into, don't you agree?

P.B. I sure do. In this job of mine, running an association of 10,000 members, I've found the Technology background enormously helpful. And another thing, I can vouch for the fact that M.I.T. prestige increases in direct ratio to distance from Cambridge. 'Way off where it's still known as "Boston Tech" the fact that you've come from there really means a lot. Now this reputation hasn't been built up *entirely* on bluff. What it means is that Technology men have earned it as a result of the way they handle themselves and their jobs. That's a responsibility for the new Alumni to think about, and I'm sure, looking them over, that they'll never let the old Institute down, in terms of character as well as scientific, industrial, and military achievement.

H.B. There's a lot in what you say. We'd certainly have a nerve to try and counsel these fellow Alumni on how to make a success of their professional or business or military careers. After all, about the only thing we've got on them is a 25-year perspective; but when that perspective includes two wars, one boom, and two depressions, they'll have to give us credit, at least for durability.

P.B. You know, that's one thing we can tell them out of our vast experience, which adds up to Mr. Sloan's when you take the two of us. That is, that somehow, if you just keep plugging along at your job and at your equally important home and community affairs, when peace permits, all the outside things that loomed so large in your mind and that looked as if they might turn your life upside down without your being able to do anything about it have a way of clearing up and proving not so devastating after all.

H.B. On the whole, then, we can give these fellows a rather cheerful and optimistic slant on things, can't we? There have been plenty of ups and downs and world-shaking events since we were in their shoes, but we're still on deck and so are most all of the good old gang in the Class of 1920, and we're looking forward with just as much eagerness and enthusiasm to the next 25 years as those of the Class of 1945 are. Isn't that right?

P.B. That's the way it looks to me. There are going to be problems and changes, sure! But nobody is going to be better fitted to meet them and come through on top than this bunch right here. You can talk all you like about the problem of providing 60,000,000 jobs, but one thing is certain and will remain so in the years ahead — there is always a shortage of, and always good places in the world for, men of genuine ability and trained intelligence, men like this group in front of us.



One of the 1895 tables with I. A. Nay and F. L. Richards standing. Seated, left to right, are H. K. Barrows, Reid McManus, W. S. Rhodes, '97, C. F. Tillinghast, G. W. Hayden, and H. M. Crane.

M.I.T. Photo

H.B. You're dead right on that. It's the ones who haven't got what it takes that will be doing the howling about job scarcities and lack of opportunities, not fellows with the brains and background of this group here. One more "pearl of wisdom" I'd like to get off while I've got them where they have to sit and take it — don't let anybody throw you off the track with that old cliché about not mixing friendship with business. That's the biggest bunk ever, based on my experience. The richest treasure any of you can hope to pile up will be your friendships. Maybe Uncle Sam will keep on seeing to it that you can't make too much money, but there's nothing in the statutes that prevents you from making friends, where you work as well as where you live; and the best advice I can give you is to work at that job wherever you are or whatever you do. To my mind, it's the one essential key to a successful career — the number and quality of friends you earn, and I mean earn, not acquire or inherit. Building real, honest-to-goodness friends is something you have to work at, but, believe me, it's the most satisfying and productive work there is on this earth.

P.B. That checks with my experiences, too, so let's leave them with that one thought and with our sincere congratulations for timing their graduation with this period of world history. I really believe they are going to have marvelous opportunities for effective and soul-satisfying activities in the years ahead, and what more could a man ask.

H.B. and P.B. Congratulations to every member of the Class of 1945 and the very best of good fortune to each and every one of you from the Class of 1920!

Good Fellows Get Together

CLASS Day activities were brought to a successful conclusion with a tea dance, attended mainly by members of the graduating class, who took advantage of what was for many their last dance before leaving for midshipmen's school, and their young ladies.

When the hands of the clock turned to seven, the main ballroom of the Hotel Statler became the scene of the Stein-on-the-Table Banquet where, in true Technology style, there were reunions of former classmates who took delight in another opportunity to "turn the nighttime into daytime with the sunlight of good cheer." Called to order by Raymond Stevens, the banquet proceeded smoothly according to the schedule established by tradition and the necessity of the times. Lending their voices to that of George Wheeler, soloist, the assembled graduates took delight in making their presence known throughout Park Square in the singing of "Sons of M.I.T." and the "Stein Song." With somewhat less volume, the singing of a medley of familiar service songs by Mr. Wheeler brought to our realization the many Alumni whose call of duties through many parts of the world made their attendance impossible. Silent tribute was paid to members of the armed forces in the unveiling of the M.I.T. service flag, with blue stars now numbering 8,461 and gold stars marking the supreme sacrifice for our country made by 137, whose absence regretfully must be recorded as permanent.

Remembered also in silent tribute was Robert H. Richards, '68, grand old Alumnus whose passing was recorded in the May, 1945, issue of The Review.

Honored

UPON the recommendation of the committee on honorary membership, headed by Horatio Lamson, '15, Frederick G. Fassett, Jr., Associate Professor of English and since 1938 Editor of The Review, was inducted into honorary membership in the Alumni Association. Alumni honors were conferred upon Professor Fassett not only for his able editorship but also for the untold contributions to hundreds of undergraduates during his 15-year sojourn at the Institute. Although these contributions were largely concerned with the counselling of undergraduates engaged in managing the various student publications, the award was perhaps even more merited by the ever friendly reception and willingness to discuss problems on every topic which any student might care to bring to him, for no student ever found a more understanding friend.

Brought forward by Charles E Locke, '96, Secretary of the Alumni Association, Professor Fassett received from Raymond Stevens the scroll attesting to honorary membership and the Association's heartfelt thanks for the long and devoted service rendered to undergraduates and Alumni alike. The good wishes of all his many friends accompany Professor Fassett in taking up new duties as director of the Office of Publications and Public Relations with the Carnegie Institution of Washington, where a former and happy association with Dr. Vannevar Bush, '16, will be resumed. We hasten to add, however, that The Review shall not lose all of Professor Fassett's many talents, for he is now included in the group of Editorial Associates.

More Blessed to Give

THE 25-year and 50-year classes were on the rostrum for presenting their class gifts. Speaking for the 25-year class, Norris G. Abbott, '20, announced a class gift of war bonds to be used by the Administration in whatever way seems most appropriate. Moreover, the Class of 1920 was blessed by receiving as well as by giving, for Mr. Abbott also announced that Professor Fassett had been adopted as an honorary member of that Class.



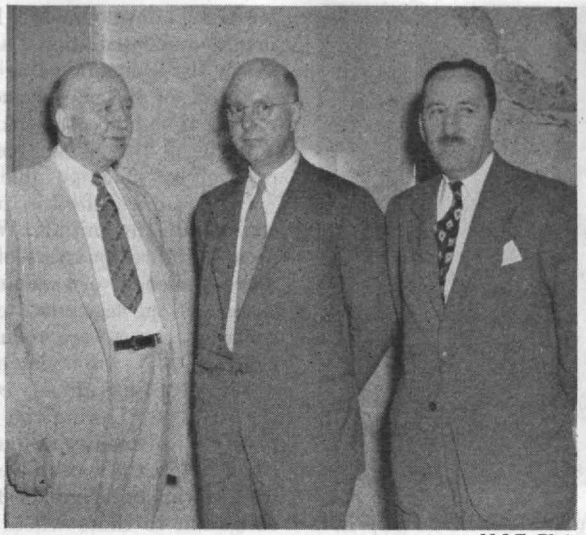
M.I.T. Photo

Dr. Compton stops at one of the ladies' tables, where he is engaged in conversation with Mrs. Edward Cunningham. The other ladies are, from left to right, Mrs. J. D. Crosby, Mrs. K. T. Compton, Mrs. Harold Bugbee, and Mrs. J. C. Dunbar.



M.I.T. Photo

Alike as two peas in a pod, Harold and Percy Bugbee join in the festivities of the banquet as completely as they did in presenting the Class of 1920 dialogue. They can be distinguished, if not identified, by their coats.



M.I.T. Photo

Charles E Locke, '96, Secretary of the Alumni Association, and Raymond Stevens, '17, President of the Alumni Association, with John D. Mitsch, '20, chairman of the 1945 Class Day activities. The apparent unconcern of this group for the successful management of Class Day exercises was more than well founded.



M.I.T. Photo

Smile of accomplishment wreathes the countenance of F. G. Fassett, Jr., who leaves The Review not only in the knowledge of a task superbly done but also with adoption by the Class of 1920, confirming honorary Alumni membership.

It was left for Dr. Compton, however, to announce the gifts from the Class of 1895 as a whole, as well as from individual members of the 50-year class.

To endow a professorship in the field of industrial management at the Institute, a gift of $350,000 was made by Alfred P. Sloan, Jr., '95. At the same time, a gift of $100,000 from Gerard Swope, '95, recently retired President of the General Electric Company, was announced to endow a group of postgraduate fellowships. These individual gifts were increased by one of $25,000 from the 50-year class as a whole, bringing the total to $475,000. In summarizing donations to the Institute for the past 12 months, a total of nearly $2,000,000 was reported by Dr. Compton, who continued:

In offering his gift, Mr. Sloan expressed his conviction of the importance of wise and skillful industrial management of American business enterprise for the future welfare of this country. A large portion of the graduates of the Institute find themselves ultimately in positions of executive or administrative responsibility, and Mr. Sloan has expressed the hope that this professorship will be effective in the years to come in preparing the graduates of M.I.T. to accept and discharge these heavy and complicated responsibilities with an increased measure of wisdom and skill.

In presenting $100,000 to endow a group of postgraduate fellowships, Mr. Swope stipulated that they be awarded to students, irrespective of color, creed, or nationality, who have pursued courses especially planned for the education of superior students, and who have the character and personal qualifications for deriving the greatest good from a continuance of their studies. Specifically, fellowships are to be granted to students as follows: to graduates of the Institute's honors courses, or the equivalent, in electrical engineering, physics, chemistry, or industrial management; to the graduates of equivalent rank of any other course at the Institute; to the graduates of equivalent rank of any other college. Fellowship grants are primarily for study at the Institute, but where it appears to be of special advantage to the student, a fellowship may be granted for graduate study at another college, technical school, or university — in this country or abroad.

The State of the Institute

IN his annual review, President Compton held out the hope for a return to a normal academic calendar by the fall of 1946, and he emphasized the postwar needs of the Institute. A new library, Faculty lounge, laboratory for gas turbines, and facilities for greater research in nuclear physics were among the principal needs of the postwar Institute. Dr. Compton's address follows:

The end of hostilities in Europe has brought about a certain lifting of the veil of secrecy about Institute activities which I shall report on at the commencement exercises, and therefore I shall not trouble you with reciting those facts at this time. We at the Institute have spent the last five years in a national emergency which has taken the full time and energy of our Alumni, our students, and our staff. But we have reason for being encouraged, and soon, I think, we shall be able to resume normal activities. I have just had a dispute with Mr. Swope as to when the transition to peace can take place, and I believe I am somewhat less optimistic than Mr. Swope; but I hope that we may be on a normal schedule again by this time next year. I am sure, however, that this will not happen unless all of us proceed in our present tasks without relaxation until the war in the Pacific is finally and completely won.

As to the Institute, I can assure you that when the time comes to make a full report, the story we shall be able to tell will read like a romantic or historical novel. Our activities at the Institute during the war remind me of the conundrum: Why is an historical novel like a lady's bustle? The answer, of course, is that each is a tale (tail) based on stern reality.

Our episodes during the past five years have produced a surprising story, and I look forward to the publication of M.I.T.'s war record (just as we published our record after the last war) as an historical novel covering the activities of the Alumni, students, and staff, many of whom have been loaned by the Institute to carry on important tasks in one phase or another in the conduct of the war.



M.I.T. Photo

In counterclockwise order at the distant 1920 table are Philip E. Wait (left of table marker), Carl H. Leander, Elliott R. Perkins, Foster P. Doane, Jr., George F. Des Marais, Frank Maconi, Herbert M. Federhen, 3d, Erskine D. Lord (partly hidden), Ernest P. Whitehead, and F. Scott Carpenter. At the nearer table, left to right, are George C. Manning, Evert W. Freeman, Elbridge Wason, Irving H. Wilson and A. E. Farrington

I should like to give you at least a bird's-eye view of what has happened in the last few years. Our budget is now 10 times the normal peacetime budget of the Institute. The campus is now filled with new, and in some cases temporary, structures to such an extent that some persons have referred to our architectural acquisitions as the "radiation renaissance." Early in the war we had the normal number of freshmen in our classes, but about 1,800 students have been taken away from their studies at the Institute for service in the armed forces. We know already that many of these men will desire to come back to the Institute to complete their training which was interrupted by the war. The results of a recent questionnaire which we have sent out to such students indicate that, out of 1,200 replies which we have received, only six do not plan to come back to complete their education, and only three indicated uncertainty on this point.

We are confronted with the need of adapting our postwar instruction to the needs of the many men whose education has been interrupted. Many of these men will not wish to take our regular courses; they will probably prefer to take the accelerated curriculum as they have already lost much time in getting started on their professional careers. We shall probably have to carry on, for a few years after the war, both the normal and the accelerated courses; but my thought is that the accelerated courses will be optional for those who wish to take them. We must not only adapt our courses to the needs of G.I. Joe, but with the increased enrollment of women at the Institute in recent years, the educational requirements of the G.I. Jills must also receive proper attention.

Nearly 200 of our staff are now on leave of absence on war duties, and these men will be available to carry on the additional instruction which the Institute must furnish after the war. Through our Division of Industrial Coöperation we now have in operation nearly 200 contracts on war research projects. These contracts cover all kinds of projects in all parts of the world. For example, the Radiation Laboratory, operating under one of the Institute's contracts with the government, has had laboratories devoted to research on war equipment in England, France, Panama, and Florida, and a group is now being established in the Pacific to aid in our fight against the Japanese.

It is no exaggeration to say that the great invasion of the Normandy coast might not have been successfully accomplished but for research undertaken at M.I.T. Damage done in London by buzz bombs would have been much greater but for M.I.T. developments. In naval engagements, too, we have made our contributions, and here we are able to assess more nearly the economic value of Technology's research. The safeguarding of the effectiveness of our "fighting ladies" clearly reveals that the costs of developments carried out at M.I.T. have been insignificant compared to the results which such research has made possible.

In the future, the Institute faces a reconversion problem of considerable magnitude. We have estimated that it would cost us about three-quarters of a million dollars to go back to a normal calendar of academic training. We must recognize this as one of the legitimate costs of the war and as one of the contributions we are required to make toward its successful conclusion. We are laying our plans for the future on this basis.

Mr. Swope has already commented upon the optimum size of the Institute. During the war we have added facilities which justify us in modifying our program of stabilized enrollment, which before the war was set at 3,000 students. We have decided to raise this to a limit of 3,500 students. The Institute has an obligation to those whose training at Technology was interrupted by the war, and we are planning for a temporary expansion to 4,500 for a very few years while the returning veterans are enrolled. An accelerated program for returning soldiers will be made available, but we hope that this will be optional with the regular peacetime academic program. Unless the war changes for the worse, we hope to return to a normal academic year beginning in the fall of 1946. In this reconversion we shall try to simplify our internal operations and reduce the normal curriculum to a simplified basis.

Reconversion

ON the matter of reconversion we face a very difficult problem of contract termination involving, among other things, the orderly transition of considerable personnel. We face a problem of space reorganization, but fortunately the buildings which have been built during this war give us an opportunity to effect this reorganization so that we may better meet the present needs of the Institute. My colleague, Mr. Killian, is in charge of "unscrambling" our space requirements and has many plans for a more effective reorganization.

We look forward to the construction of several new buildings as soon as wartime restrictions can be removed. An enlarged and adequate library, which is sorely needed, appears as a distinct possibility, and architects are already working on the plans. We hope to have a separate building, housing laboratories and research and development projects for the use of the armed forces. The Institute has co-operated with the armed services before the war and has trained many of its men in specialized



M.I.T. Photo

Harold Thorkilsen, 6-45, chairman of Senior Week



M.I.T. Photo

Horace S. Ford, Treasurer of the Institute

postgraduate fields. This has always been a part of the postgraduate educational program of the armed services, and it will be continued. But the War and Navy Departments are anxious to have a place where they can train students for the master's degree (and perhaps even for the doctorate) and where developments requiring military secrecy might be carried on outside of the regular laboratories. The Executive Committee has already authorized a building for this work.

Needs for the return to a peacetime program include a new gymnasium serving as the center for athletic activities. A new machine-tool laboratory is also required. After the last war it was possible to obtain equipment from surplus war stock, with which the present machine-tool laboratory on the third floor of Building 3 has been outfitted. Much of this tool equipment is long since out of date, and it is hoped that a new laboratory can be organized after the war which will be located on one floor. The sale of surplus war machine tools should provide an opportunity for acquiring the latest equipment. The Institute also needs additional dormitories and a Faculty club.

I think it well to call to your attention some trends which are taking place at the Institute. Technology must be looked upon not as an inert body but as a living, developing organism. Its plans cannot be made once and for all; rather they must be fitted to the growing needs and opportunities of the Institute. Originally there were only a few courses of instruction at M.I.T. By 1870, degrees had been given in five separate courses, chemistry, civil engineering, mechanical engineering, mining, and general science. By 1875, two more had been added, physics and architecture. Now, in 1945, we have 19 separate departments. This addition of new departments is a reflection of the changing needs in science and technology, and undoubtedly additional departments will be added in the future when the need for them is clear. But changing conditions do not necessitate only the addition of departments; we have eliminated courses, too, when it has seemed that the Institute is no longer the best place for carrying out some particular phase of work. The courses in mining and in public health are examples of courses which, for this reason, have been dropped. There are new fields now requiring increased attention at the Institute. For example, the course in automotive engineering requires that instruction be given in gas turbines. The recent advances in the preparation of foodstuffs require a better laboratory for food technology, and there is need for increased attention to nuclear physics.

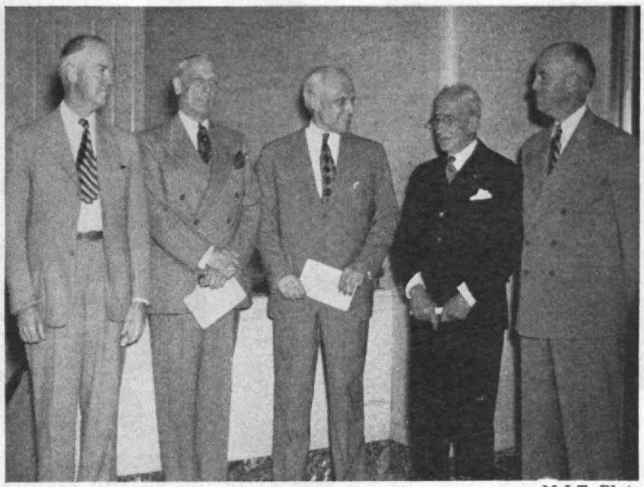
Graduate Study

THERE has been a great increase in the amount of graduate work done at the Institute. Before World War I the amount of graduate work was negligible. Now graduate work is so extensive that the number of graduate students is more than equal to an undergraduate class. At the present time there is a type of "supergraduate work" going on under the Division of Industrial Coöperation. It is the purpose of D.I.C. contracts to aid in solving the problems of industry. Under such a program the facilities of the Institute are placed at the disposal of industrial concerns which have important technical problems requiring solution. Recent graduates of the Institute working on these projects not only obtain valuable graduate training of a practical type from their work on such projects but are frequently in a position later on to find employment in the concerns for which the research at Technology was undertaken. Such a system has its dangers and pitfalls, to be sure, but we feel that the over-all effect is distinctly good; that the benefits outweigh the disadvantages; and that this type of operation is desirably on the increase.

There is need for even greater attention to the selection of students than in the past. In this type of work the alumni clubs and Honorary Secretaries, operating for the past 10 years in all parts of the country, interview students aiming to enter the Institute. Through such interviews the Institute is apprized of the local reputation and standing of the applicant and other data which have a bearing on the student's admission. The quality of the students entering the Institute determines the effectiveness of our program of instruction, and hence the Alumni can provide most valuable educational service in assisting us to select qualified students for entrance.

The Technology Loan Fund, which Mr. Swope has already told you about, and the scholarships which the Institute is able to award are great assets in assuring that properly prepared and qualified students have opportunity to carry on their studies. Mr. Swope has also urged the Alumni and the staff to take measures so that, from among these *selected* students, the Institute can direct its energies to developing *exceptional* students. Such a program requires an increase in the Faculty and an increase also in the Technology Loan Fund.

I am happy to be able to report to you tonight that we are now able to take a great step forward in this direction. Gerard Swope, of the Class of 1895, has turned over to the Institute the sum of $100,000 to be used for postgraduate fellowships. These fellowships are to be used to further the objective of developing exceptional students. The awards are to be in amounts of $1,000 — more or less. Mr. Swope has left the administration of this gift sufficiently flexible that the conditions "more or less" would enable the Administration to award an amount as



M.I.T. Photo

Representatives of the 25- and 50-year classes flank the representative of the Corporation. Left to right: Percy Bugbee, '20, Alfred P. Sloan, President of the Class of 1895, President Karl T. Compton, Gerard Swope, '95, and Harold Bugbee, '20, photographed at New England Mutual Hall on June 23. Addresses by Dr. Compton and Mr. Swope were delivered in the evening; the others spoke at Class Day exercises.



M.I.T. Photo

A. W. Norton, '20, President-elect, Alumni Association



M.I.T. Photo

J. D. Crosby, '21, chairman of Alumni Day committee



M.I.T. Photo

Conducted to the speakers' table by Charles E Locke, '96, F. G. Fassett, Jr., receives from Raymond Stevens, '17, the certificate attesting his election as an honorary member of the Alumni Association, as Captain R. H. Blair, Alfred P. Sloan, '95, and Gerard Swope, '95, enjoy the presentation.

high as $2,000 to a very exceptional graduate student. Furthermore, although it is likely that most of these fellows will pursue their graduate studies at the Institute, this gift makes it possible for the recipient to study elsewhere — in foreign countries, if this appears to be to the best interest in developing his full abilities.

The thought has often occurred to me that it is strange that, of all the important institutions of comparable size, the Institute alone does not have any endowed professorships. I cannot account for the reason that our many generous friends have not made their gifts available for such purposes, for the Institute has long needed such endowed professorships. Again I am glad to report that Alfred P. Sloan, Jr., also of the Class of 1895, has arranged with the Corporation to provide Technology's first endowed professorship. Mr. Sloan's career has been marked by unusual success in industrial management, and I am glad to be able to report that he has made available $350,000 for endowing a chair in this field. The dispensation of this fine gift is left to the Administration. This gift should be sufficient to command the services of an excellent man in industrial management. The Institute does not have schools of business or education of the ordinary type. We do offer courses in business and engineering administration based on a solid foundation in science and engineering — the physical bases of industrial activity. Mr. Sloan's gift will enable the Institute to carry out its policy of effecting such education in a practical way, in close co-operation with industry.

It appears that in the future the support for private institutions must come from many individuals. Fifteen years ago when I came to the Institute, M.I.T. was sixth in endowment among the institutions of higher learning, but I must now report that we are ninth on this list. This is not so much the result of a poor showing on the part of donors to Technology, but rather of a better showing on the part of donors to several other universities. The very good reputation which the Institute enjoys is responsible for many fine gifts from our Alumni, but I am often surprised at the response we have from nonalumni and from people who, so far as we can tell, have no apparent connection with M.I.T. This emphasizes the value of a good reputation and an effective policy of public relations. We must still further broaden and deepen the base of our financial support.

Besides the gifts which I have reported this evening, the Class of 1895 has made a gift of $25,000. During the last year the Institute has received gifts of nearly $2,000,000. Except for one year, which included a bequest from the late Charles Hayden, of the Class of 1890, this is the largest addition to its funds which M.I.T. has received in any year since 1930.

And now, because I have been told that the press expects me to speak in accordance with a newspaper release which it has already received, let me quote myself as follows:

We share the conviction that the future of this country is as full of opportunity as it is full of problems. It is the business of the Massachusetts Institute of Technology to educate young men in the fields of science and technology so that they may be able to tackle these problems effectively and to make constructive use of these opportunities, not only for the sake of their personal advancement but as a contribution to the intellectual, industrial, and social advancement of our nation. Each of these splendid gifts will make possible further developments in the Institute's program of education and national service.

Graduation

ONCE more the effects of the war in curtailing higher education were sharply apparent in the 79th graduation exercises, held in New England Mutual Hall, for in contrast to a class of 600 or more graduates of normal times, only 258 degrees were awarded to the same number of graduates. In these graduating exercises were included seven doctors of philosophy, 10 doctors of science, and three masters of science in city planning; 51 masters of science and three bachelors of science in architecture; 162 bachelors of science in the school of engineering; and 22 bachelors of science in the school of science. Two recipients of doctor's degrees in February received their hoods at the exercises on June 25.

Not only in number of degrees granted but also in the percentage of degrees awarded to students of foreign lands was the effect of the war felt. Of 10 doctor of science degrees awarded, only three were awarded to native-born students. Master of science degrees were awarded to 23 foreign students and 28 residents of the United States, while seven out of 187 bachelor's degrees were awarded to natives of other countries.

Among those receiving degrees were 10 women, representing 4 per cent of the class. Marie Agnes Jakus of Cleveland received the degree of doctor of philosophy, and Norma F. Goldstein of Brooklyn, N.Y., and Gladys P. Lyons of Winthrop, Mass., were awarded master's degrees in city planning; and the degree of master of science in chemistry was awarded to Mrs. Miriam W. Leff of New York City. Bachelor's degrees were won by Frieda S. Omansky of Brookline (architecture), Carolyn D. Cross of Raymond, N. H. (general engineering), Selma C. Swift of Burbank, Calif. (aeronautical engineering), Elaine M. Bickford of Billerica, Mass. (chemistry), Mrs.

Natalie W. Bondi of Augusta, Maine (physics), and Mary E. Sullivan of Cambridge (mathematics).

Recognition

DISTINGUISHED recognition came to James R. Killian, Jr., '26, Executive Vice-president of the Corporation since 1938 and from 1926 to 1938 Editor of The Review, who received the honorary degree of doctor of science from Middlebury College on June 25 at Middlebury, Vt.

The doctorate was conferred by President Samuel S. Stratton upon Mr. Killian as a graduate of the Institute who has shown loyal devotion to his alma mater. In awarding the degree, President Stratton said:

> You have richly earned by your outstanding services as editor and administrator the distinguished appointment of executive vice-president in one of our really great educational institutions. In recognition of a career marked not only by a high degree of confidence and skill as an executive but by unselfish service and high purpose, we are proud to welcome you to our honorary fellowship. It is my privilege and pleasure to confer upon you the honorary degree of doctor of science.

Visiting Committee Report

THE Corporation Committee on Student Activity* met in Cambridge on January 3. All Committee members were present, and the Faculty and Administration were represented. Previous reports of this Committee have dealt with certain changes in facilities which it was expected might produce an atmosphere favorable to cultural development. War conditions made impossible any actual changes at the time of the earlier discussions. It is, of course, still impossible to make any improvements of the sort referred to. The particular points included physical changes in Senior House, physical improvements for social purposes in the other dormitories or the building of a connecting unit which would include such facilities, a new dormitory or a group of new dormitories including appropriate facilities for agreeable social contacts. It was reported that a house occupied and operated by students of the low-income group had proved successful and that consideration might be given to obtaining an additional house for such use.

During the meeting of January 3 there was extended discussion of the present-day problems of the student body under crowded wartime conditions and of the problems peculiar to the foreign students, of whom there are now about 300. It was pointed out that at the present time there is no satisfactory place at the Institute, except in the fraternity houses, where boys can invite girls to visit, have refreshments, and dance at a minimum of expense. A similar problem is met when parents come to visit their sons at M.I.T. There is no satisfactory place at the Institute where the parents can be entertained.

In discussion of this problem, various places in the Institute which might be appropriately adapted were considered. There seemed to be objections of one sort or another to all of them. Perhaps the most promising possibilities of doing something at this time along the desired line would be to make use of Pritchett Hall in Walker Memorial. There is a piano there at this time. It might be possible to set up a bar for serving soft drinks. At the present time, however, there are no very comfortable chairs in the room although its size would probably be adequate for the purpose. Another alternative in Walker Memorial might be the use of the Faculty lounge together with the adjacent areas at the front of the building and the gallery on the side. To quite an extent, these areas would be within easy hearing distance of the phonograph which is already located in the Faculty lounge. It is understood that this room is not customarily used by the Faculty in the evenings.

The Committee recommend that the Administration give consideration to the possible use, as indicated, of either Pritchett Hall or the Faculty lounge and adjacent areas.

* Members of the Committee for 1944–1945 are Egbert C. Hadley '14, Chairman, Raymond Stevens, '17, and J. Willard Hayden.

Launched

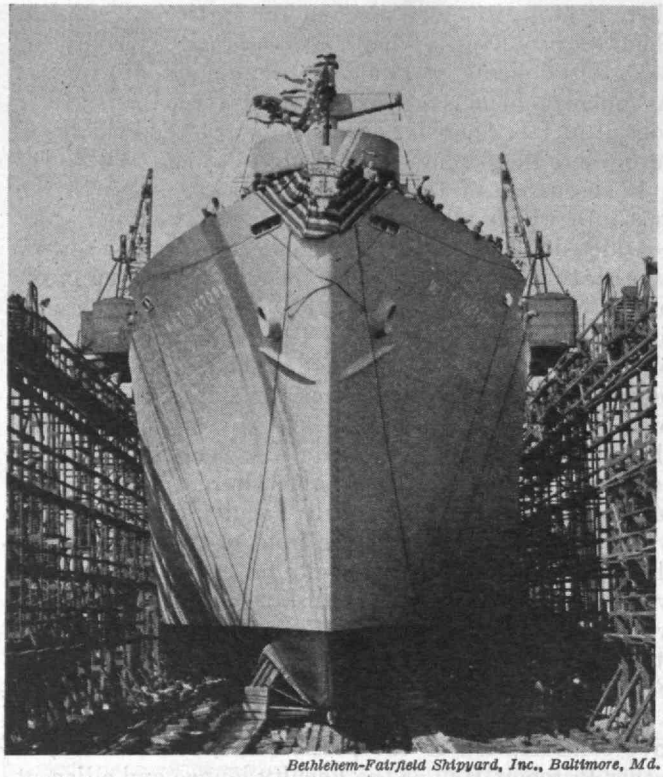
SPONSORED by Mrs. Karl T. Compton, the S. S. *M.I.T. Victory* was launched at the Bethlehem-Fairfield Shipyard, Inc., in Baltimore on May 12 and passed a series of rigid tests on the trial run on June 2. The 57th Victory ship and 471st vessel to be built at the yard, the *M.I.T. Victory* was named for the Institute by the United States Maritime Commission, suggestion having been offered by Irving S. Levine, '40, research director of the C.I.O. Maritime Commission. President Compton attended the launching, as did a number of Alumni.

Victory ships are modern counterparts of the Liberty ship and are being built today at four yards, the Bethlehem-Fairfield yard being the only one on the East Coast engaged in this type of ship construction. The Victory ships have been designed to hold their own in competitive postwar trade with a speed of over 15 knots — some 50 per cent greater than that of the Liberty ships. Of all-welded construction, the *M.I.T. Victory* is driven by a 6,000-horsepower steam turbine. She has a deadweight cargo-carrying capacity of 10,700 tons and



M.I.T. Photo

From the speakers' table at the Alumni Banquet this photograph was obtained of Alfred P. Sloan, '95, Gerard Swope, '95, Captain R. H. Blair, in charge of the naval program at the Institute, Rudolf F. Haffenreffer, '95, Dr. Compton, and Raymond Stevens, '17. All seem to enjoy the Stein-on-the-Table Banquet immensely.



Bethlehem-Fairfield Shipyard, Inc., Baltimore, Md.

The S.S. M.I.T. Victory *was the 57th Victory-type ship to slide down the ways at the four-year-old yard of the Bethlehem-Fairfield Shipyard, Inc.*

is 455 feet long with a molded breadth of 62 feet and a draft of 32 feet. The keel of the *M.I.T. Victory* was laid on March 23, and her construction time was 50 days. The ship was launched on the 47th birthday of her master, Captain T. Burgess.

The launching ceremony on May 12 was preceded by a small luncheon at the Belvedere Hotel in Baltimore, given by Mrs. Compton. Among Alumni who, with their wives, were in attendance were: Robert Lacy, '98, and W. Watters Pagon, '07, both active in the M.I.T. Association of Baltimore; Edward D. Merrill, '09, an Honorary Secretary in Washington; Ralph L. Thomas, '13, also of the Baltimore club; George W. Spaulding, '21, President of the M.I.T. Association of Baltimore; and William K. MacMahon, '22, President of the Washington Society of the M.I.T. J. M. Willis, Vice-president and general manager of the Bethlehem-Fairfield Shipyard, with Mrs. Willis, also attended.

Through the American Merchant Marine Library Association, the Institute has made a gift of a commemorative library for the *M.I.T. Victory*.

Deaning

TWO excellent addresses were given as part of the program of the 245th meeting of the Alumni Council, held on May 28 at Walker Memorial, business matters of which included the presentation of regular and special reports of officers and committees and the introduction of new officers of the Council. Raymond Stevens, '17, President, made the following presentations: A. Warren Norton, '21, President-elect; Alf K. Berle, '27, Vice-president-elect; John A. Lunn, '17, and Henry A. Morss, Jr., '34, newly elected members of the executive committee; Edward J. Healy, '23, representative from the Technology Club of Philadelphia; Malcolm G. Wight, '06' re-elected representative from the Technology Club of Hartford; and Howard F. MacMillin, '21, from Mt. Gilead, Ohio.

The Rev. Bernard F. Doucette, '33, formerly in charge of the meteorology division of the Manila Observatory and President of the Technology Club of the Philippines, spoke of the conditions he had encountered during his internment at Santo Tomás University by the Japanese. Conditions were described as hard but not harsh in this instance. Food was scarcely adequate for subsistence, and all interned by the Japanese suffered badly from malnutrition.

For the Advisory Council on Athletics, John A. Rockwell, '96, reported that students have carried on their sports activities with good judgment and dispatch and have made splendid showings, particularly in track and rowing. There is still need for larger and improved sports facilities, however, and with anticipated increased enrollment of students after the war this need will become even more critical.

Speaking for the Administration, Robert M. Kimball, '33, announced the appointment of Captain Lybrand Smith, United States Navy (retired), as visiting professor of naval engineering in the Department of Naval Architecture and Marine Engineering, beginning July 1, and that the S.S. *M.I.T. Victory* had been launched, both of which items are recorded further in these columns. The convocation held in the Great Court on May 8 for V-E Day probably represented the greatest gathering at the Institute in recent years, with an estimated attendance of about 5,000 persons. The end of the war in Europe has had little effect at Technology except that war research at M.I.T. has probably reached its peak.

Alfred T. Glassett, '20, Vice-president, then introduced H. E. Lobdell, '17, Dean of Students, whose talk, "Deaning," had been announced as the evening's attraction. Expressing deep appreciation and his feeling of honor at being called upon to appear as a speaker before the Alumni Council after 24 years of service in his present capacity, Dean Lobdell reviewed the activities of his office. Most persons think of the Dean's office as being charged with matters of student discipline, but this activity has required less time and attention than contact with student activities and administration of scholarship aid and loan funds. The rating system developed by Joseph C. MacKinnon, '13, Registrar, has simplified the work of the Faculty in dealing with students having poor records. While in theory this system is based on purely mathematical ratings, the personal element is always introduced to make sure that the students are dealt with fairly. Scholarship aid has shown a big increase during Dean Lobdell's terms of office, and the administration of the Technology Loan Fund has been most successful. One excellent result of making loans to students is that it helps to develop the personal characteristics of the applicant.

For about the past decade the stabilized enrollment at the Institute has operated very satisfactorily, although at present it is suffering from war dislocation. This policy of stabilized enrollment is now being re-examined, for the return of veterans is expected to result in unusually large applications for admission. It is possible that the entering class may be stabilized at 700 with temporary postwar increases even up to 900. With graduate students

a total enrollment of 4,500 may be reached. The continuous operation of the Institute during the war without any summer vacation has placed a heavy burden on the staff, for whom a respite must be sought.

Dean Lobdell briefly summarized his ideas for the qualifications of a good dean as follows: (1) He should have a memory which is adjustable as conditions demand. (2) He should possess ability as a good listener, making only brief, noncommittal replies. (3) He should limit the giving of advice to a minimum, permitting students to work out their own problems as far as possible. (4) He should give a talk before the Alumni Council only once in 24 years.

Appointed

SEVERAL new Faculty appointments have been made, one in the Department of Naval Architecture and Marine Engineering, two in the Department of Civil and Sanitary Engineering, and changes have been announced in the Department of Chemistry.

On July 1, Professor Arthur C. Cope assumed duties as head of the Department of Chemistry. Appointment of Dr. Cope followed a request of Professor Frederick G. Keyes, Head of the department since 1923, that he be freed of administrative work so that he might concentrate on important research in the field of physical chemistry. With the assumption of the new post by Dr. Cope, Professor Leicester F. Hamilton, '14, will become executive officer of the department.

Dr. Cope was appointed professor of chemistry in 1944, having come to the Institute from Columbia University. Distinguished for his work in organic synthesis, he was the recipient last September of the $1,000 American Chemical Society award in chemistry. Since 1942 he has been a technical aide for Division 9 of the National Defense Research Committee. He taught for six years at Bryn Mawr College before joining the faculty of Columbia in 1941. Holder of a National Research Fellowship at Harvard from 1932 to 1934 and of a Guggenheim Fellowship in 1941, Dr. Cope received his bachelor of science degree from Butler University in 1929 and his doctor of philosophy degree from the University of Wisconsin in 1932.

At the time these administrative changes were made, plans were adopted for the reorganization of the Department of Chemistry, without the present separate divisions of organic, inorganic, and physical chemistry.

Joining the Institute Faculty on July 1, Captain Lybrand Smith, United States Navy (retired), becomes visiting professor of naval engineering in the Department of Naval Architecture and Marine Engineering. He will share in the instruction of naval officers studying naval construction and engineering at the Institute. After having served as head of the research branch of the Bureau of Ships, Captain Smith in 1941 became assistant co-ordinator of research and development of the Bureau of Ships. He represented the Navy on the National Defense Research Committee until his release from active duty this year following retirement for physical disability incurred in the line of duty.

After his graduation in 1911 from the United States Naval Academy until 1919, Captain Smith served continuously at sea, performing engineering, gunnery, navigation, and staff duties. For the next two years he held



Harris & Ewing

Captain Lybrand Smith who becomes visiting professor of naval engineering

various cabinet posts in the Dominican Republic and thereafter was for two years commercial superintendent of the Naval Communication Service. He then became senior assistant engineer and later chief engineer of the U.S.S. *Colorado*, and after two years with the repair division of the Bureau of Engineering, 1926 to 1928, became commanding officer of the U.S.S. *Zeilin* and then of the U.S.S. *Claxton*. Serving successively thereafter as officer in charge of the United States Naval Boiler Laboratory; of the boiler desk in the design division of the Bureau of Engineering; and of the propeller desk, with additional duty for research at the United States Experimental Model Basin. Captain Smith from 1936 to 1938 was engineer officer on the staff of the Commander of Battleships, United States Fleet.

A registered professional engineer, Captain Smith took the degree of doctor of science at American University in 1935. He has shared actively in the programs of several professional societies, including the American Society of Naval Engineers and the American Society for Testing Materials. He was on the advisory committee of the National Industrial Conference Board from 1931 to 1933, was a member of the Committee on Standard Merchant Vessels from 1934 to 1936, and was a member of the Research Council of the Navy from 1939 to 1941. His decorations represent service in the Mexican campaign, in World War I, in the Haitian campaign, with the Second Marine Expeditionary Force, and in World War II.

Captain Smith was born in 1891 in Decatur, Ill. He married Miss Katherine Atwater on board the old U.S.S. *Ranger* in Boston Harbor in 1912.

Formerly director of the Wisconsin lake pollution survey and more recently special technical investigator for the South Dakota Board of Health, Dr. Clair N. Sawyer has been appointed associate professor of sanitary

chemistry in the Department of Civil and Sanitary Engineering. He takes up his new post on September 1.

The appointment of Dr. Sawyer is part of the plan to expand the program in sanitary engineering to meet the anticipated postwar demand for sanitary engineers. Dr. Sawyer will be concerned with the teaching of the operational phases of sanitary engineering, including sanitary chemistry, water analysis, and fundamental research in water, sewage, industrial waste treatment, and stream pollution.

Dr. Sawyer is a native of Wisconsin and received the degree of bachelor of science in 1930 from the University of Wisconsin, where he remained until 1936 as instructor in chemistry. In that year he was awarded the master's degree from the University of Colorado. At the University of Wisconsin, from which he received the degree of doctor of philosophy in 1938, Dr. Sawyer was research assistant in the department of sanitary engineering from 1936 to 1938 and from 1938 to 1940 was postdoctorate fellow in the same department. In 1940 he was appointed assistant professor of sanitary chemistry and biology at New York University, which position he held until 1942, when he was appointed director of the governor's committee to carry on at Madison, Wisc., the study of lake pollution.

Dr. Arthur T. Ippen, assistant professor of civil engineering in charge of the hydraulic laboratory at Lehigh University and widely known for outstanding research and professional activities in the field of hydraulics, has been appointed associate professor of hydraulics in the Department of Civil and Sanitary Engineering at Technology as of October 1. Dr. Ippen was responsible for the complete revision of the hydraulic laboratory at Lehigh University, and his appointment is part of a plan to expand the program in hydraulics at the Institute, where he will be in charge of work in fluid mechanics. The development of a new hydraulic laboratory is anticipated among the important postwar plans of the Institute.

Born in London in 1907, Dr. Ippen was graduated from the Technical University of Aachen, Germany, in 1931, following which he was an exchange fellow at the Institute of Hydraulic Research at the University of Iowa. From 1934 to 1937 he was a teaching and research fellow in hydraulics at the California Institute of Technology, where he received the degree of master of science in 1935 and the degree of doctor of philosophy in 1936. He remained at the California Institute of Technology as instructor and research engineer until 1938, at which time he joined the staff of the civil engineering department of Lehigh University.

The Art of Thinking

CONTRARY to the uncritical acceptance of the thoughts of others, the real objective of every true educational institution is the development of free and independent thinking. Certainly this has always been the foremost aim at the Institute. While there exists, on the part of those associated with Technology, a tendency to believe that this objective has been achieved, occasionally it is well to take stock and to re-examine the situation as evaluated by others, particularly if such an evaluation is made by a disinterested party.

The book, *Report on the Russians*, by W. L. White, affords an excellent opportunity for such re-examination. Paul M. Wiswall, '09, calls attention to the following paragraphs, appearing on pages 102 and 103 of this much discussed book, of which Harcourt, Brace and Company are publishers. Telling of trips through the Soviet which were made by representatives of the press, Mr. White records:

> One of the reporters tells the story of a famous Russian chemist, who after the Revolution found an honored position on the Oxford teaching staff. However, the Bolsheviks, who have a deep respect for science, kept after him to come back, offering him not only honors and salary, but unlimited research facilities, and finally they succeeded in persuading him.
>
> A few years ago they were entertaining a group of British and American scientists, and the old Russian chemist, now a highly honored professor, was brought out to greet them at a big dinner. He was, of course, delighted to see his old friends again and was warm in his praises of Western universities, of Oxford, and in particular of Massachusetts Institute of Technology which he had often visited. There, he said, one found the true scientific spirit, a fine atmosphere for the search after pure truth — a great assemblage of minds.
>
> "But, professor," piped up an eager young Komsomol, "what about our Soviet universities? You say nothing of them."
>
> "Young man," said the old chemist, "in our Soviet universities we teach the students many important facts. But at M.I.T. they teach them to think."
>
> The authorities, of course, didn't care for the remark but the old man was an honored world figure and could get away with it.

Academic Background of Staff

A RECENT survey of the academic background of the 524 members of the Institute's regular staff for the academic year 1944–1945, on the basis of degrees granted, gives ample evidence that the Institute is not becoming ingrown with its own graduates. The analysis shows the following interesting and gratifying results that:

237 staff members (45.2 per cent) received all of their training outside of M.I.T.

164 staff members (31.1 per cent) received all of their training at the Institute.

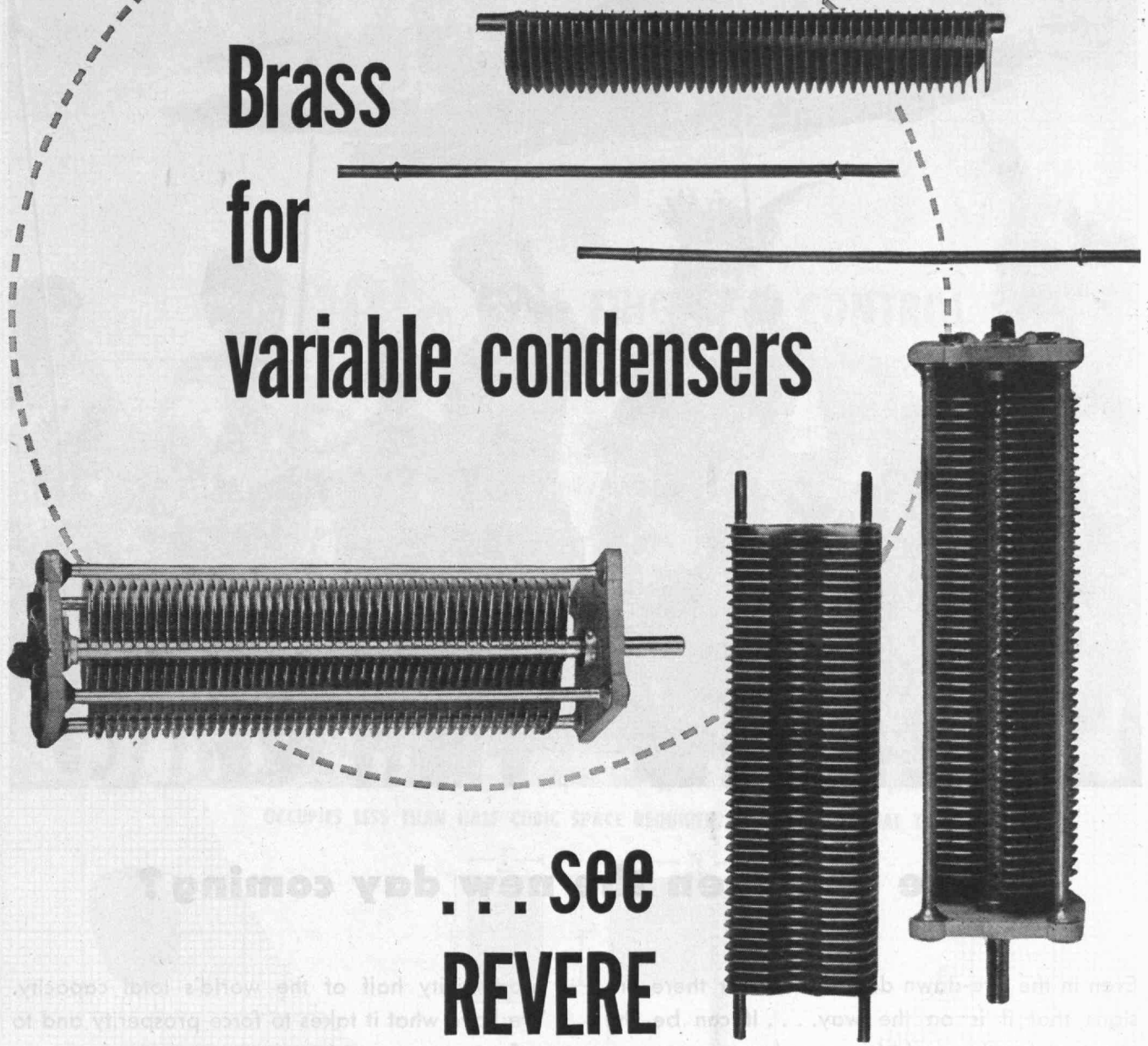
123 staff members (23.5 per cent) received degrees from M.I.T. and other educational institutions.

Elected

KENNETH R. FOX, '40, Assistant Professor of Textile Technology at the Institute, has been elected president of the Lowell Textile Institute, succeeding Charles H. Eames, who retired in June after serving as president for more than 40 years. Himself a graduate of the Lowell Textile Institute with the degree of bachelor of textile engineering in 1938, the new president received the degree of master of science in Textile Technology from M.I.T. in 1940. After varied experience in textile manufacturing, Professor Fox served as a research assistant in the textile division at Technology in 1940 and 1941, then becoming an instructor. He was promoted to assistant professorship in 1943.

Professor Fox is vice-president of the Fabric Research Laboratories, Inc. A fellow of the British Textile Institute, he is also president of the Boston Microchemical Society and a member of Sigma Xi, Tau Epsilon Sigma, the American Association of Textile Chemists and Colorists, the American Physical Society, the Textile Institute, and the American Association of Textile Technologists.

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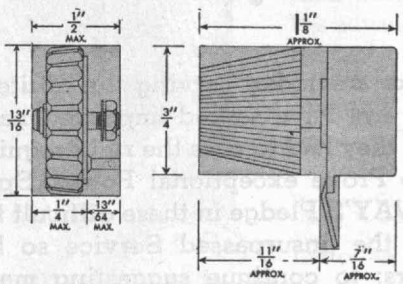
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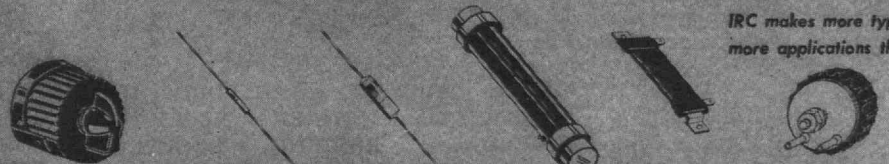
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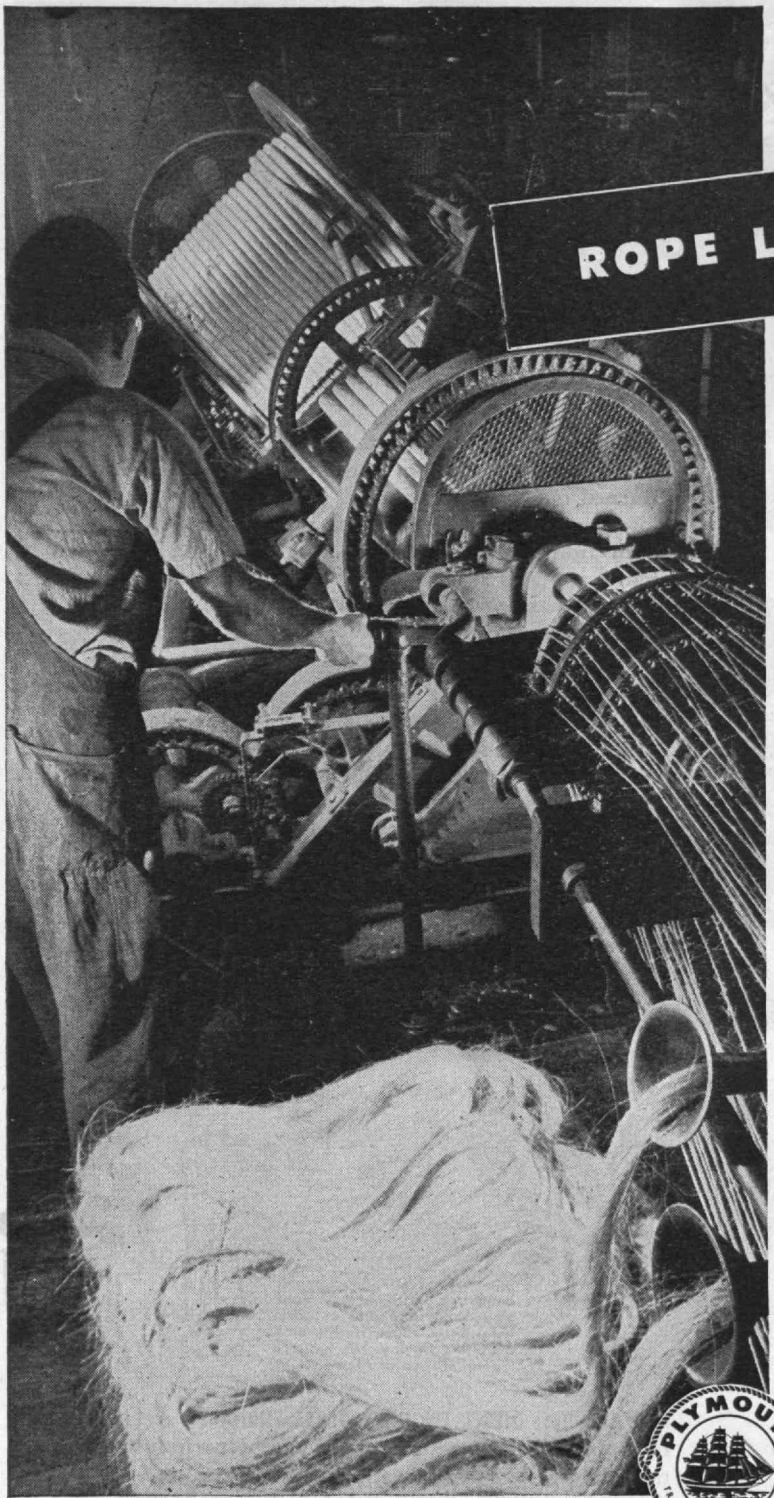
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ROPE LAUGHS AT 800°F

David Dietz, Science Editor of Scripps-Howard, tells how science met an exacting rope job.



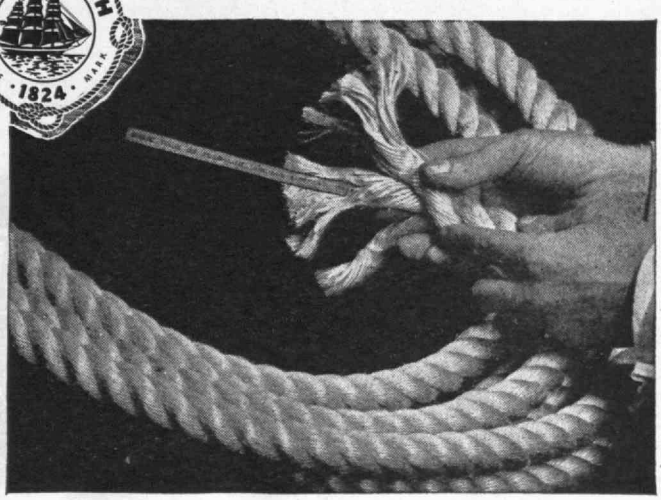
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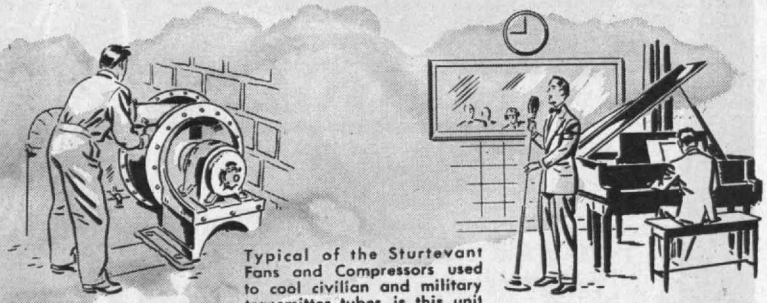
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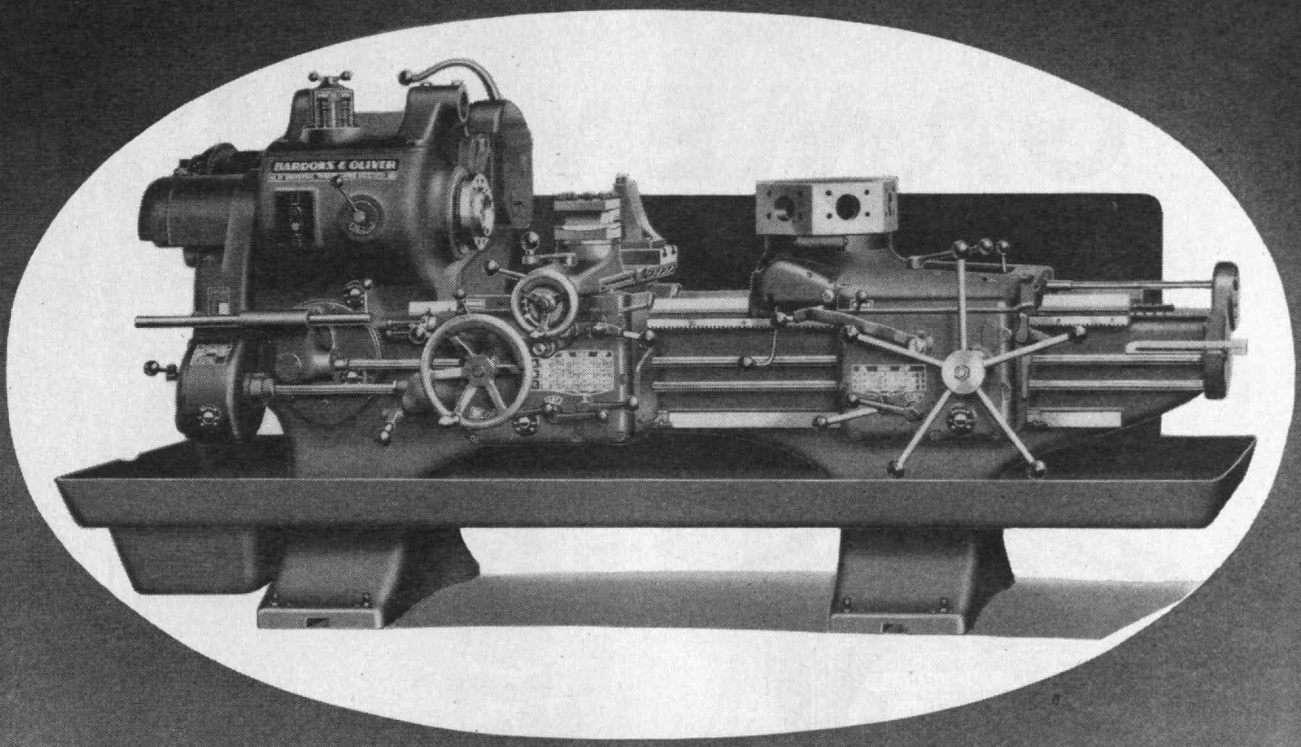
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TAKE IT TO TAFT-PEIRCE

CIVILIAN TRAINING FOR PEACE

(*Continued from page 562*)

nations who have dedicated themselves to brutality. I prefer to assume the philosophy of the man in the book, *The Man from Glengarry*. You remember that having been slapped on one cheek he turned the other. But having been slapped on that cheek also, he then took off his coat and proceeded to whale the daylights out of his assailant. In modern warfare, of course, you do not have time to take off your coat. In our search for national morality let us be certain that the Christian way of life is not destroyed for want of power to defend it.

Why all this argument of the morality of nations? It is in anticipation of the many arguments that are certain to arise favoring the weakening of our armed forces when hostilities come to an end. It is by way of introducing the other matter I want to discuss—the kind of a Navy we need in the postwar era. We need a Navy so strong that it will act as a preventive for war. We need a Navy that will be our force — our threat, if you will — if and when we are compelled to give up the persuasive technique and resort to coercion. This means we need a fighting Navy.

What a fighting Navy is and what goes into its make-up are questions not easily answered in a few words. But a study of our experiences in naval actions to date indicates that the only successful Navy today is the one which is ready for anything — with everything. For example, no sooner do we have one type of sea engagement in which the opposing surface craft remain hundreds of miles apart, fighting it out with their aircraft alone, than we meet the enemy with surface craft and slug it out gun for gun, almost the same as we did in the Spanish-American War.

Nor is it safe to formulate any hard and fast rules as to how the various types of war machinery — air, undersea, and surface — work together under battle conditions, for no two sea engagements that have taken place in this war have been the same. In the past years, those who have held out for the might of battleships above all else have been right. So also have those who have insisted that dive bombers alone can win engagements, and facts will back up the advocates of the aircraft carrier. Battle reports justify them all. To demonstrate "I told you so," all anyone has to do is to hunt through existing battle reports and select one that supports his stand.

The obvious catch in such logic is the ruthless fact that tomorrow's sea battles may approximate something never dreamed of before. Had you told me five years ago that I would participate in naval actions similar to those I experienced in Africa and Sicily, doubtless I would have smiled at your ignorance of naval strategy and tactics. Here are a few examples of what I mean.

It has long been an accepted concept in military strategy that invasion over water is one of the most difficult of all military endeavors, and yet in November, 1942, three tremendous task forces transported in complete secrecy many thousands of troops across thousands of miles of open water to strike simultaneously at the northern and western coasts of Morocco. This was the first of many great amphibious operations. Its success was due to careful planning, complete secrecy, and the fact that the United States and its British allies were able to

(*Continued on page 592*)

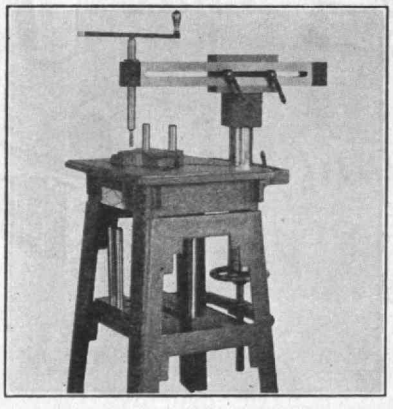
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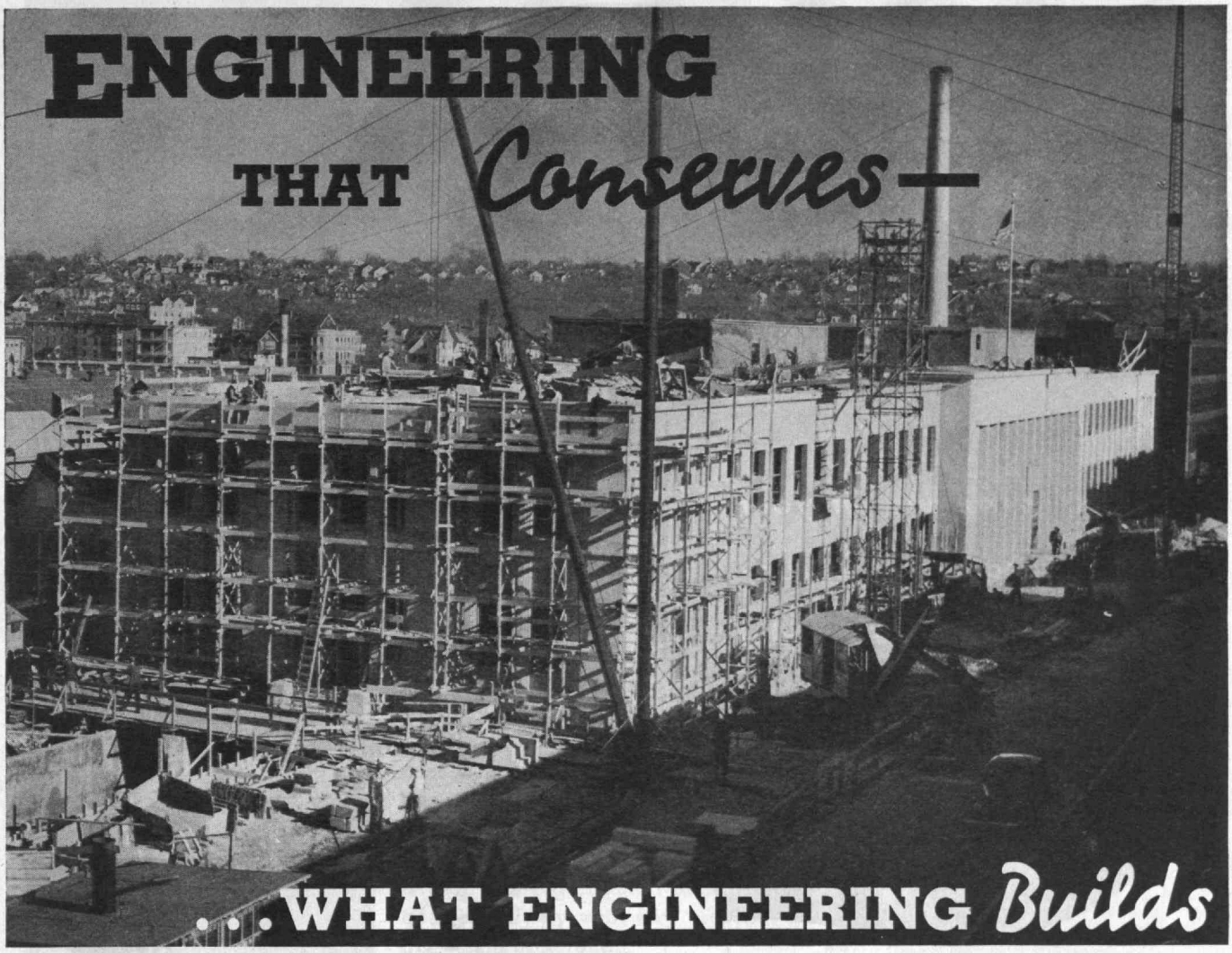


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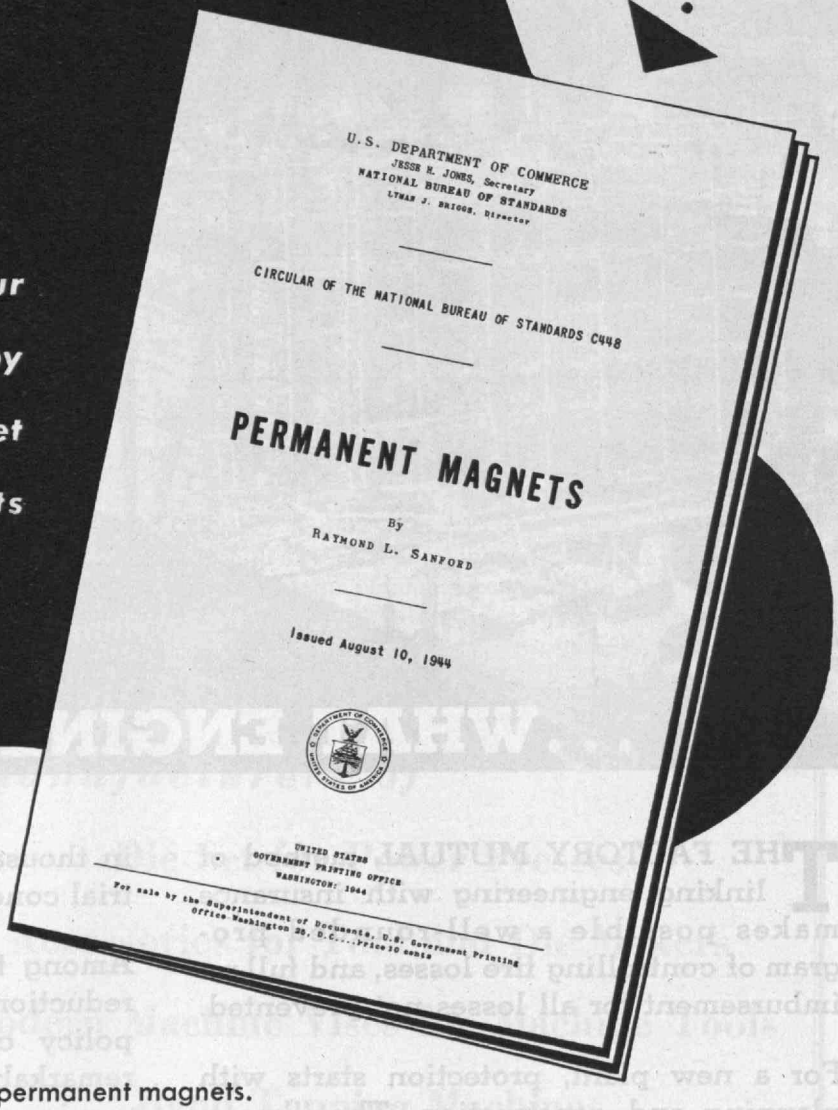
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Issued August 10, 1944

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CIVILIAN TRAINING FOR PEACE

(*Continued from page 588*)

build rapidly the many types of shipping needed for such an operation and to develop the complicated equipment needed to make such an operation successful. Had you told me five years ago that we would have types of small craft that could be loaded from transports, travel over water to the beach, leave the water, and then proceed inland as motor vehicles, I might have thought that you were starry-eyed visionaries or victims of a Rube Goldberg complex. Had you told me that two destroyers could maneuver in a thick fog in formation at 25 knots to pass successfully through and around 11 different approaching convoys, I would have thought that you were dreaming. Had you told me that it was possible to take a convoy of nearly 100 ships up a narrow channel in a dense fog without ever sighting a channel buoy during the procedure, I would have expressed extreme skepticism and would have questioned the sanity of the person who attempted it. Had you told me that it would be possible to transport complete armies with necessary military equipment by air and drop them as combat units in specified areas, I would have considered you a second Jules Verne. Yet all these things have happened during this war and now are almost commonplace.

We may form but one conclusion: The Navy must possess ships and equipment of all types. Further, the Navy will continue to need more modern ships and gear. The art of naval war has never and will never "stand pat." Fresh techniques, new ideas, and advanced scientific developments render today's super-weapons obsolete overnight. The scientific developments in this war have been prodigious. It is the task of engineering students such as you graduating here to help keep our Navy up to date by outstripping the laboratory, research, and drafting-board designs of other nations who tomorrow may seek to force their evil will upon us.

But ships and gear, old and new, are not enough. It is imperative that the Navy have well trained men to man these ships and to operate their gear. You can picture how futile it would be to equip our ships with powerful new types of weapons if we did not have personnel aboard who knew enough to operate and repair them. As the machinery of war becomes more complex, the level of training required by the soldier and sailor necessarily rises rapidly. On the average, it has taken two additional years of education to train a successful military man for this war than it did in the last. As an illustration, the Navy has found that the illiterate sailor is practically useless for most naval purposes, if not an actual menace to the safety of his shipmates, and has embarked upon a huge program of teaching some 120,000 sailors to read and write. Yet illiteracy was not considered a serious problem in the last war. In the higher echelons of education the Massachusetts Institute of Technology has trained hundreds of officers in electronics at the graduate level. Without these officers our Navy could not possibly have been as successful as it has been.

Man has a habit of taking the latest scientific developments and converting them to war use. In this war the Navy has been no exception. It has employed to the utmost advantage the results of recent researches in

(*Continued on page 594*)

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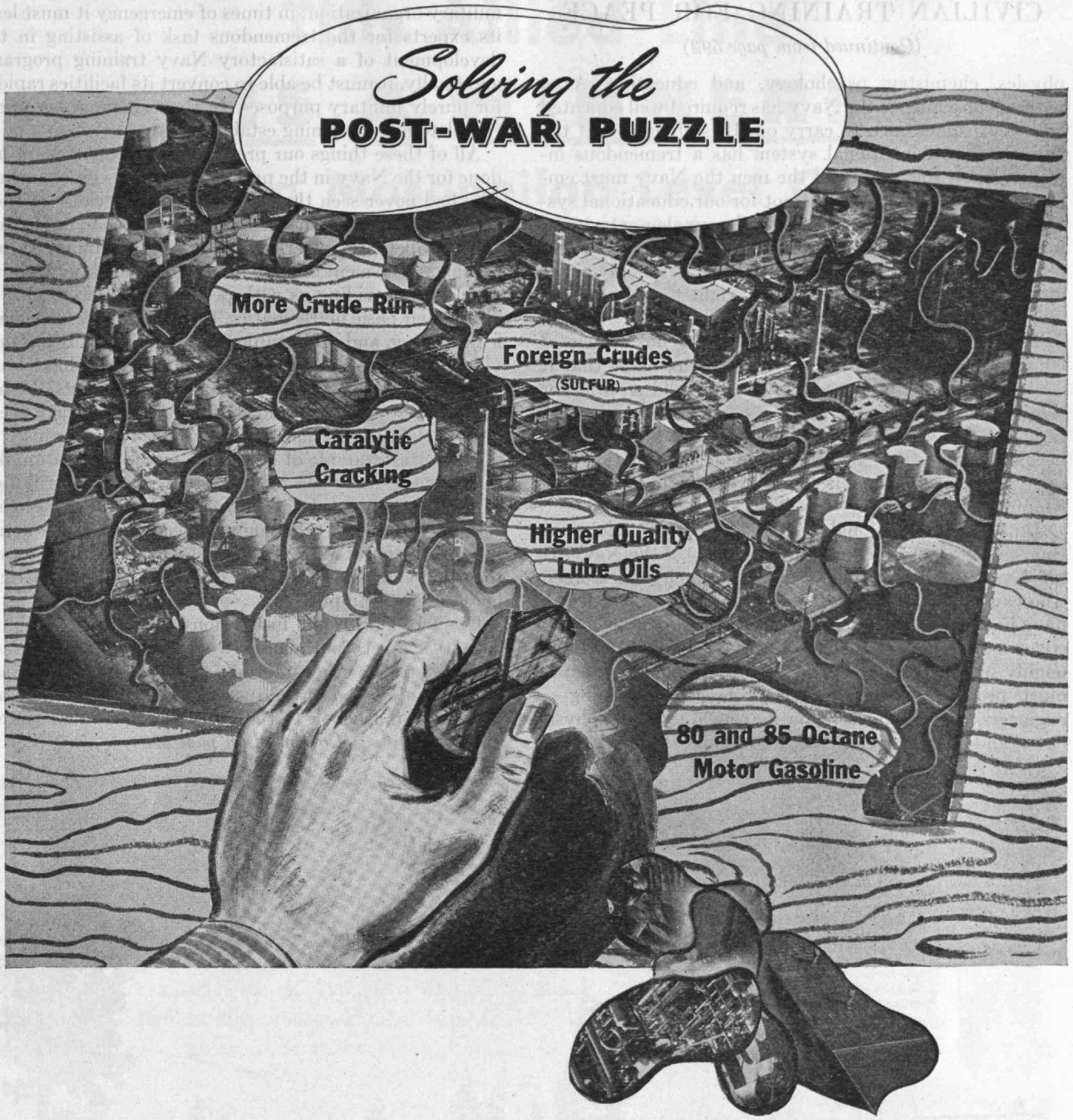
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CIVILIAN TRAINING FOR PEACE

(*Continued from page 592*)

physics, chemistry, psychology, and education. As a natural consequence the Navy has required well educated and well trained men to carry on. It is obvious that the basic civilian educational system has a tremendous influence upon the quality of the men the Navy must employ in times of war. Were it not for our educational system — our public and private schools, our elementary and high schools, our colleges and universities — we would not have conquered Germany and Italy as quickly as we did, and we would still have every right to worry about winning our ultimate victory over Japan.

There are, of course, those who criticize our system of education in America. I think most of us agree that it could and will be improved. However, I hold no brief for those critics so far as the Navy is concerned. To be sure, from the Navy's point of view some modification has been necessary, but, in general, modern education was ready for the job, and it has played a big part in the winning of the war.

A nation's educational system has a tremendous responsibility in training men for the needs of the Navy. It must provide adjustable personnel — men and women who can tackle any task; it must provide personnel who have had the basic training in such fundamental knowledges and skills as can be converted rapidly and thoroughly into necessary military knowledges and skills; it must provide personnel with professional training — engineers, lawyers, doctors, businessmen, teachers, physicists, and the like — all of whom are essential to a military organization; in times of emergency it must lend its experts for the tremendous task of assisting in the development of a satisfactory Navy training program; and finally, it must be able to convert its facilities rapidly for purely military purposes. In short, it must become a complete naval training establishment.

All of these things our present educational system has done for the Navy in the present war. It has given us men who had never seen the ocean, yet who, because of their sound foundation in mathematics, were able to navigate a ship competently after a few months' training. It has made possible a cut of many months in the Navy training period by providing us with personnel who were able to apply their basic mathematics, English, sciences, mechanical drawing, and other subjects to naval uses. It has provided us with top-notch professional people. It has loaned us its professional educators and psychologists. It has converted its facilities and its faculties to military needs and wholeheartedly handed them over for Navy use.

No better example of how much civilian education has done for the Navy can be found than in the contribution of this great institution. Engineers from the Massachusetts Institute of Technology are leaders in Navy activities everywhere; M. I. T. research has done much to win the war; and one of our top electronics schools is right here on your campus.

Civilian educational institutions and military training activities must continue to work hand in hand. Each should keep the other informed as to its objectives. Each must be interested in the success of the other. The postwar Navy must look to the postwar educational system

(*Continued on page 596*)



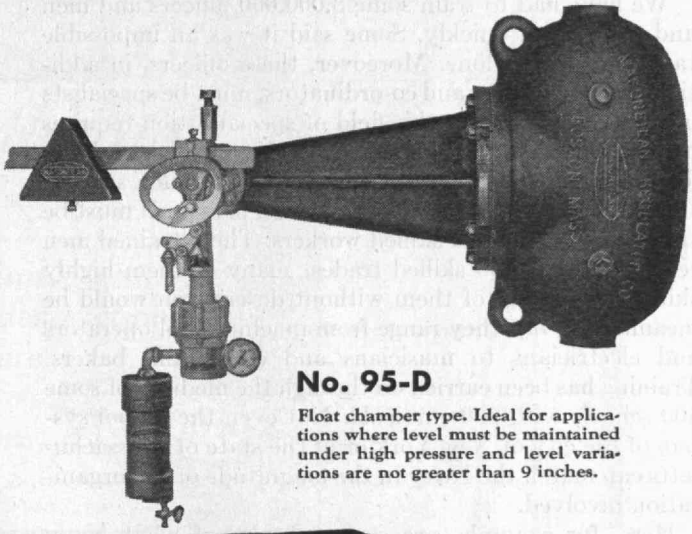
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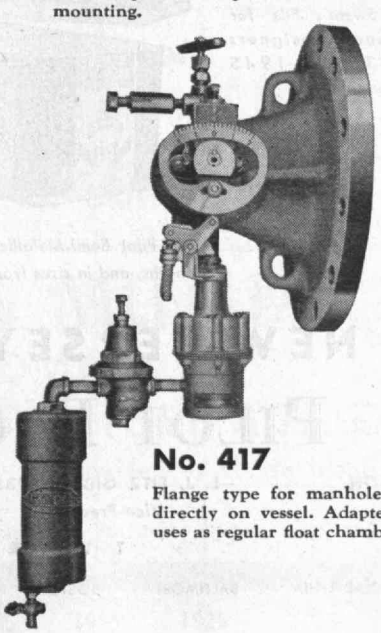
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CIVILIAN TRAINING FOR PEACE

(*Continued from page 594*)

for scientific assistance. The Navy must depend on the schools for even greater contributions should there ever be another conflict in which our nation would be forced to participate.

The magnitude and complexity of Navy training are such that at this time I can give you only a very sketchy outline. Probably the best way to indicate the significance which we attach to training in the Navy would be to review the biggest training problems we have encountered.

We have had to train some 3,000,000 officers and men and train them quickly. Some said it was an impossible task, but it was done. Moreover, these officers, in addition to being leaders and co-ordinators, must be specialists in a given field. Often this field of specialization requires training comparable to that of students at a graduate level. Roughly speaking, there are about 50 such specialties. At least 40 per cent of the enlisted personnel must be trained to the level of skilled workers. These trained men represent some 150 skilled trades, many of them highly skilled. To list all of them without description would be meaningless, but they range from machine-tool operators and electricians to musicians and cooks and bakers. Training has been carried on through the medium of some 500 schools with 300 curricula. Not even the school system of the city of New York or of the state of Massachusetts can match the Navy in the magnitude of the organization involved.

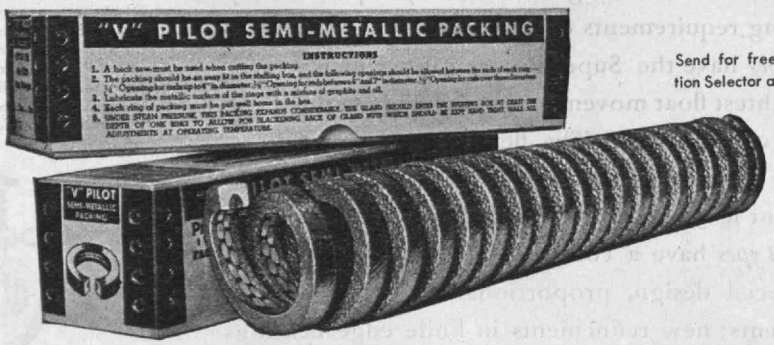
Here, for example, are some samples of what Navy schools must teach. For officers we have such diversified curricula as chaplain, aerology, chemical warfare, communications, damage control, diesel engineering, naval intelligence, military government, radar, ordnance, supply, and torpedo courses. For enlisted personnel we offer curricula in recruit training, aviation machinery, boilermaking, bugling, cooking and baking, diesel operation, laundering, photography, storekeeping, photolithography, refrigeration, and welding. These are but a very few illustrations. It is almost impossible to find a civilian trade which does not have a shipboard counterpart, even to that of a soda fountain operator.

I have been told by educators that our Navy schools are the equal of any civilian vocational schools from the point of view of instruction, and that they are far superior to many in terms of instructional materials and gear. Navy schools differ from civilian schools in that they are of necessity very highly specialized. It is hardly likely that civilian schools can prepare for so many vocations. This does not mean, however, that they cannot give basic training that will accelerate Navy training.

Every naval officer and every naval petty officer is a teacher. In peacetime, training takes place all of the time. Some training occurs in the schools mentioned, the remainder aboard ship under operating conditions, through classes and printed training courses. Thus the Navy has a problem of teacher training. The fact might surprise you, but at present the Navy has six activities that might be designated as teachers colleges. In the field it also has some 200 instructor training officers, whose sole task is to develop in-service teacher training. Further, the Navy employs the most modern teaching meth-

(*Continued on page 598*)

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CIVILIAN TRAINING FOR PEACE

(*Continued from page 596*)

ods in its own ranks. Aboard ship, teachers are as concerned about curricular objectives, lesson plans, and motivation as is a professor of education ashore.

A question which we might well ask is, "How do we know that our teaching is 'on the beam' and doing its job successfully?" In order to evaluate our training, scientific testing and educational research become absolute necessities. We have constructed hundreds of tests for measuring the aptitude of Navy men and for rating their achievements. These tests are constructed by experienced psychologists, educators, and military men, collaborating with each other, pooling their knowledge, and evaluating the results.

I hope I have painted a picture clear enough to show the size of the job that has been done by Navy training officers. In brief: We had to have a knowledge, obtained through job analysis, of what the various Navy jobs were; we had to establish training curricula to prepare Navy men for these jobs; we had to establish schools and devise materials for this training; we had to prepare the teachers; and finally, we had to evaluate the instruction in order to find out what we have accomplished and in what respects our efforts were deficient. During this war the establishment of our far-flung training program took place in a comparatively short time. It probably did not expand to a satisfactory level, however, until we had been in the war almost two years. Had the enemy been in a position to be more aggressive as far as we were concerned, this lack of adequate training structure early in the war might have had serious consequences for us.

New wars may, and probably will, strike like lightning from a clear sky. We found this out at Pearl Harbor. If another war comes, no time will be permitted to develop a new training organization. Therefore, for the safety of our nation we must preserve a training organization that is more than a skeleton plan filed in half-forgotten archives. Readiness means vigilance. Vigilance means trained men — ready for anything, with everything!

In summary: I have expressed my firm belief that coercion is a technique that is inherent in human behavior, that we cannot discard it by legislation, and that as a method of bringing immoral or recalcitrant people into line, it is a perfectly moral approach if the goal itself is moral. I have tried to show that for the present, at least, the preservation of our way of life requires the

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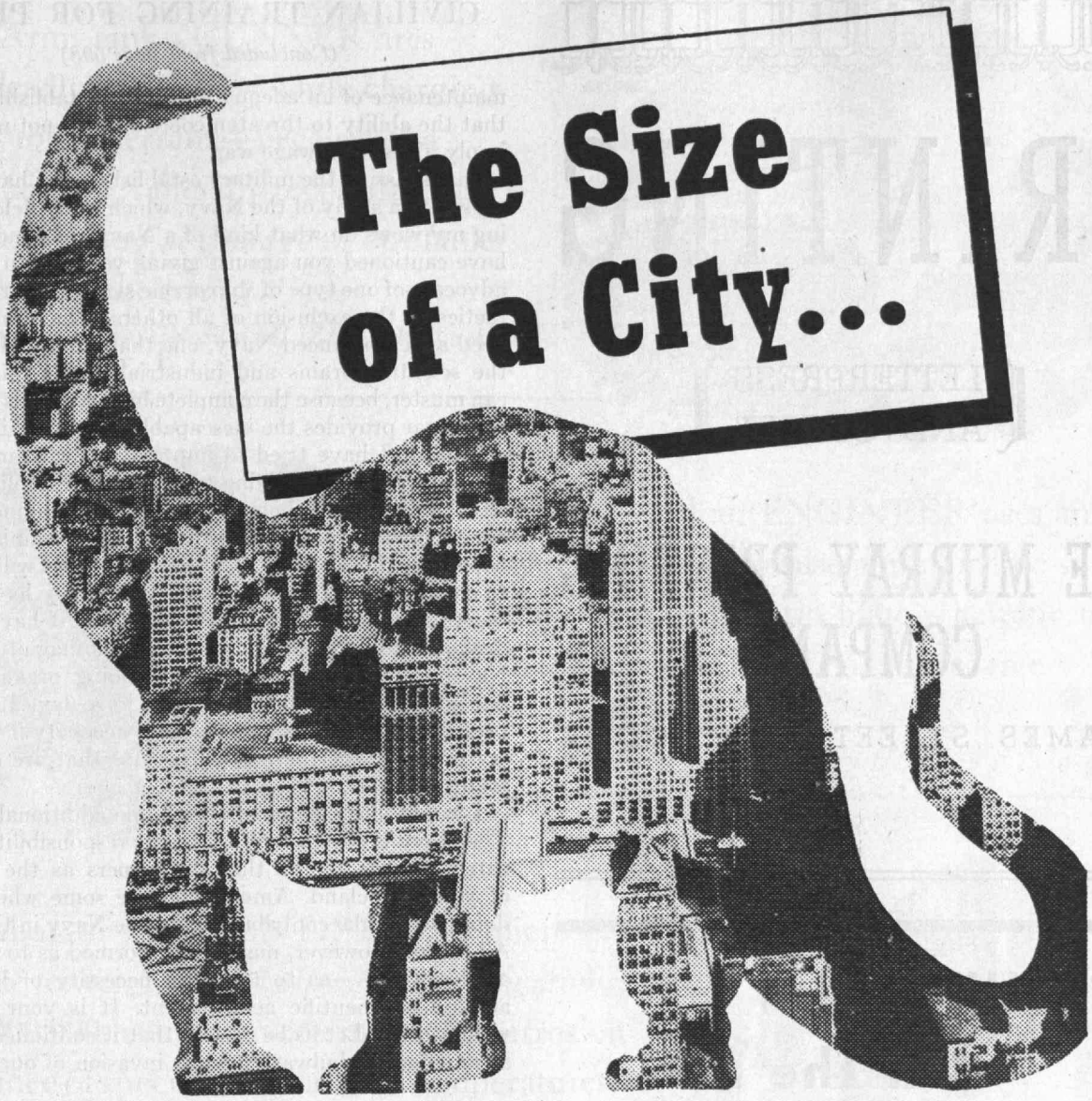
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CIVILIAN TRAINING FOR PEACE

(*Concluded from page 598*)

maintenance of an adequate military establishment, and that the ability to threaten coercion does not necessarily imply a desire to wage war.

In discussing the military establishment I have limited myself to a study of the Navy, which is my field. In stating my views on what kind of a Navy we should have, I have cautioned you against giving your ear to the rabid advocate of one type of ship or one system of strategy and tactics to the exclusion of all others. I have insisted we need a well balanced Navy, one that is backed up by all the scientific brains and industrial power this country can muster, because the complete history of this and every other war provides the inescapable proof of this need.

Finally, I have tried to impress you with my idea of the importance of training to a military establishment. I have pointed out how indispensable a sound civilian educational organization is to military training in the hope that the Navy and civilian educators will continue to co-operate in the postwar period as they have worked together under the pressure of this war. I have also endeavored to give you a concept of the magnitude of the Navy training task. A Navy training organization is not something that can be built in a day. It must be preserved and nourished as a vital necessity if this country is to survive the critical periods that are certain to follow this war.

I would like to conclude with one additional thought. The Navy is *your* Navy. It is your responsibility as educated citizens to see that it prospers as the guardian of your homeland. Among you are some who will undoubtedly make contributions to the Navy in the future. All of you, however, may keep informed as to the needs of the Navy — as to the vital necessity of keeping it abreast of scientific achievement. It is your Navy as well as mine. Let us be certain that it continues to stand as an effective bulwark against invasion of our shores.

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PREREQUISITE TO FREEDOM

(*Continued from page 564*)

middle of March, 1944, at which time it was fully superseded by much more adequate quantities of the commercially built equipment based on the same designs. Thus the Radiation Laboratory played a very important role in making technically possible the crippling blows struck by General Doolittle's great air force.

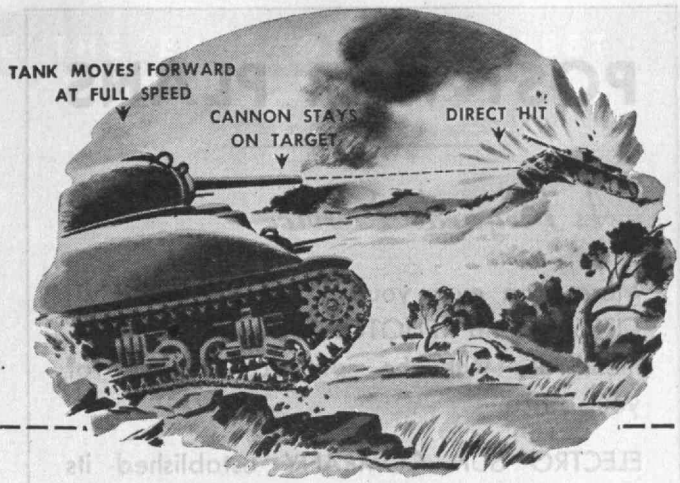
The above essential facts about radar in the antisubmarine campaign and in the allied bombing operations over Europe are matters of public record, but the Institute's part in these episodes has not previously been disclosed.

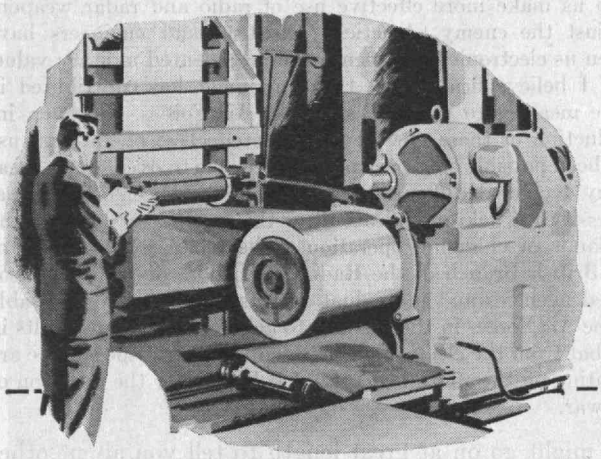
Also hitherto undisclosed is the fact that M.I.T. operated a field service laboratory in England during the last two years of the war. This British Branch of the Radiation Laboratory (B.B.R.L.) had direct channels of supply, communication, and exchange of personnel, under military auspices, of course, with the parent laboratory in Cambridge. It served the air forces, the ground forces, and occasionally the United States Navy, the

(*Continued on page 602*)

In an Army tank a GUNNER fires with deadly accuracy – while charging across rough terrain – because of a gun stabilizer, officially recognized as one *outstanding advantage* of our tanks over those of the enemy.

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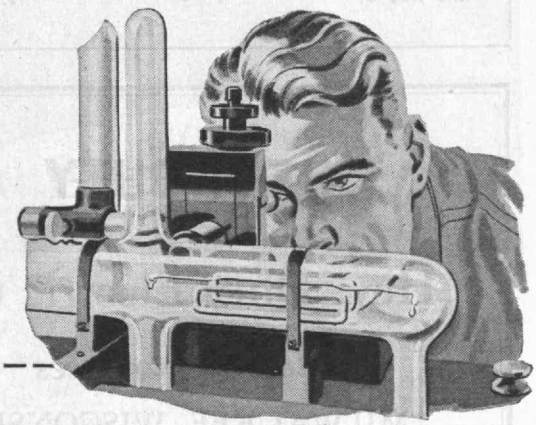


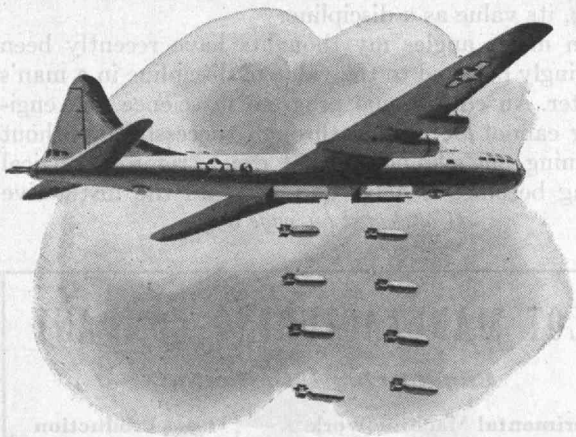
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BRUNO H. WERRA '32, *Director of Research*

PREREQUISITE TO FREEDOM

(*Continued from page 600*)

Royal Navy, and the Royal Air Force. It even maintained a substation in Paris in the later months of the war.

I shall say nothing about the varied activities of this laboratory except to quote an excerpt from a letter of commendation from Lieutenant General Carl Spaatz, Commanding United States Strategic Air Forces in Europe, to Dr. John G. Trump, '33, of the Electrical Engineering Department, who was head of the B.B.R.L. General Spaatz wrote:

> I should like to take this opportunity to congratulate you and your associates in the Advisory Specialist Group and in B.B.R.L. on the splendid job you have done and are doing to help us make more effective use of radio and radar weapons against the enemy. American scientists and engineers have given us electronic equipment of unprecedented military value, and I believe firmly that this equipment has contributed in large measure to the success of our Air Forces. However, introduction of these new devices into effective operational use has been possible only because we were able to overcome a great many technical difficulties. Also, there has been a continual necessity for field modifications of this equipment to meet the demands of changing operations. The technical assistance of the British Branch of the Radiation Laboratory and its associated agencies and individual experts has been indispensable to the Air Forces in their efforts to achieve maximum results in combat from the electronic equipment at their disposal. We are counting on the continued help of B.B.R.L. for the duration of the war.

I might go on at great length to tell you about other aspects of M.I.T.'s war work. You and all our constituency have been patient and patriotic in not pressing for such information during the long time when it would have been embarrassing and improper to give it.

I trust that the samples which I have described briefly will reassure you as to the usefulness of your alma mater during this war emergency and will strengthen your conviction that the Massachusetts Institute of Technology is a good investment in the future of America.

Finally, let me express a few thoughts on one aspect of the educational program which you have just completed, which I mentioned at the beginning of my remarks, namely, its value as a discipline.

From many angles my thoughts have recently been increasingly directed to the value of discipline in a man's character. An educational program in science and engineering cannot be carried through successfully without disciplining one's mind so that exact, rigorous, logical thinking becomes a habit and becomes the instinctive

(*Concluded on page 604*)

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PREREQUISITE TO FREEDOM

(*Concluded from page 602*)

manner of approach to any problem. In the current discussions of postwar military training or any alternative for such training in the interest of national security, the subject of discipline again comes forth, this time primarily in the sense of Army discipline aimed at the automatic carrying out of the orderly procedures required for Army maneuvers and operations. From still another side our social leaders in education, the church, the home, and in political life frequently stress the importance of better discipline in order that the various elements of our complex society may work together with less friction and chaos and with greater effectiveness in attaining commonly desired objectives.

The thought which I would leave with you is that discipline is a necessary prerequisite to freedom. The child in a summer camp by the sea can have complete freedom to play out of doors, provided its mother is certain that it will obey her injunction to stay away from dangerous portions of the beach or the dock. If the child is not disciplined to obey this injunction, then its freedom for play must be curtailed.

In an athletic team, like a football team, the practice, afternoon following afternoon, is a rigid discipline to instill the habit of automatically doing the right thing smoothly, efficiently, and without conscious thought. In an end run, for example, the line is disciplined to charge and to hold; the end and the tackle are trained to box the opposing tackle; the men running interference are disciplined, one to take out the opposing end, and another to block the first man on secondary defense. By such discipline in the routine-recurring aspects of the play, the players are given freedom to devote their attention to the unexpected aspects of the play, and this is what makes an effective team.

The same thing is true generally throughout life. Consider, for example, the Four Freedoms. Freedom of speech is secured only to the extent that speakers are disciplined to avoid statements which are incorrect or improper or palpably contrary to public interest. Freedom of worship is possible only when people are disciplined to give fair consideration to the religious beliefs of others. Freedom from want can be achieved only if society is disciplined to work together as a team and not as an aimless, discordant group of quarreling individuals working at cross purposes. Freedom from fear can be achieved by that discipline of mind which eliminates chance and uncontrolled behavior and substitutes orderly procedure.

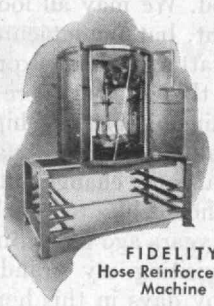
Discipline in the sense in which I am using it does not mean subjection of the individual; it means adjustment to our social environment and the achievement of fundamental habits which permit our fundamental actions to be gone through automatically, smoothly, swiftly, and without thought. It is this type of discipline through which we can achieve freedom and free opportunity to meet the problems of life.

Not the least of the benefits which you have received in your education at this institution is the development of discipline in your habits of thought and action, which I trust will secure for you throughout life a greater degree of freedom to achieve success and happiness.

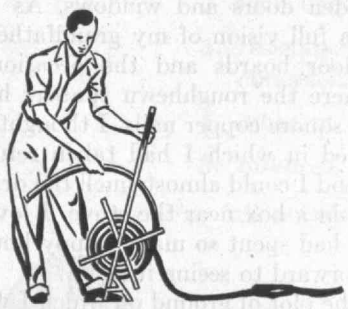
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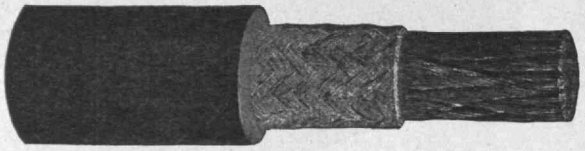
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VARIABLES AND CONSTANTS

(*Continued from page 560*)

The second constant we come to is the power of love. I earnestly hope that you will all discover romantic love. I hope that you also will learn the satisfaction of loving those in need. We learn from the 13th chapter of First Corinthians that without love all else is of no avail: "Though I speak with the tongues of men and of angels and have not charity, I am become as sounding brass, or a tinkling cymbal." No matter how far we climb in life, we have missed our real purpose if we neglect a genuine, loyal love.

The third constant on which we can depend is that of worshiping God above mankind. If we worship only what is within us, we are less than what we might be. We may express this worship in different ways, but it is essential that we recognize that there is a divine power above man which is the cause and explanation of all, and it is essential that we do not set ourselves up as the supreme being. Truth, goodness, and beauty are the same, yesterday, today, and forever.

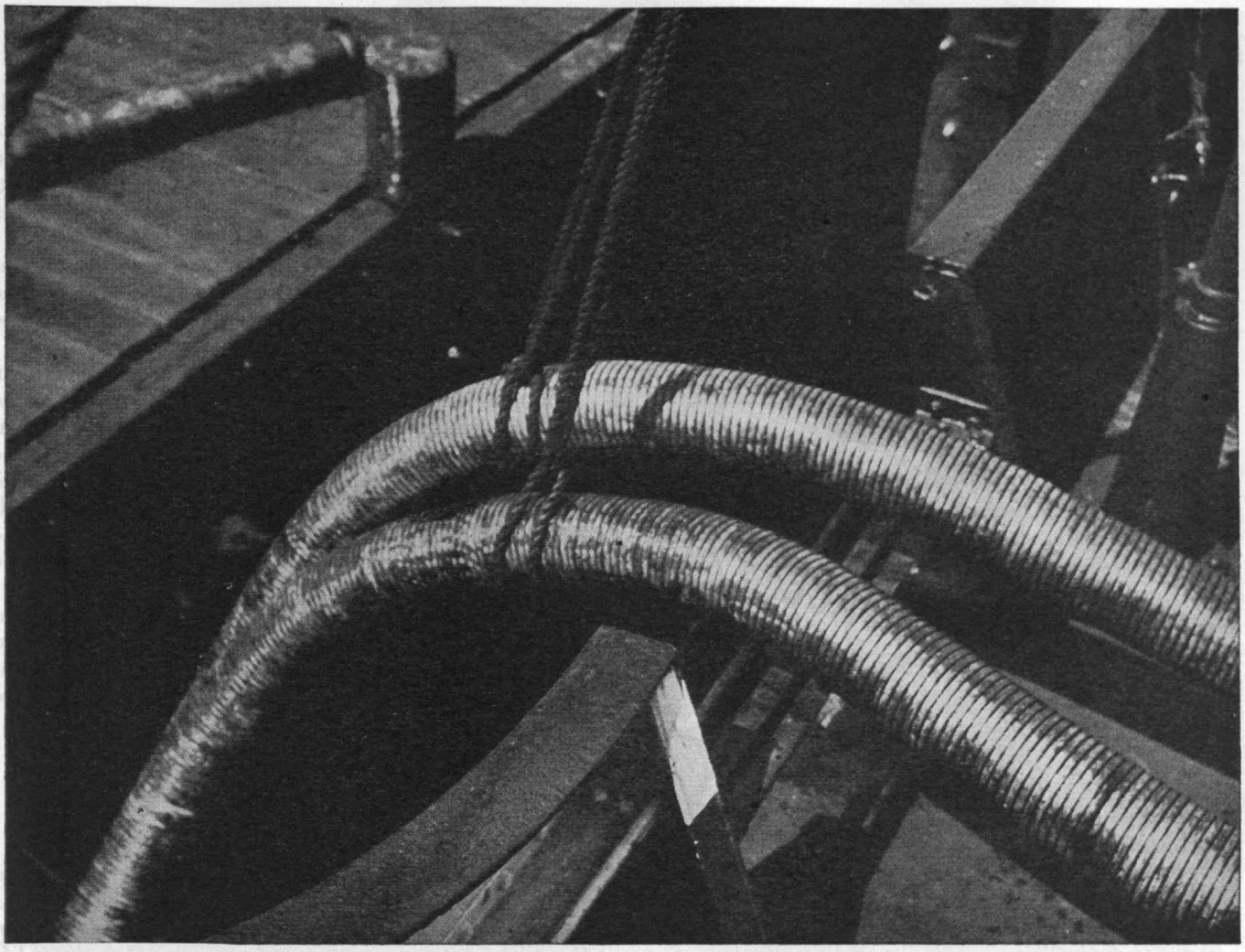
A visitor came to a small town not long ago and noticed that there stood on the common three churches close together. The visitor asked a native to explain the difference between the three churches. "Well," said the native, "the first church, over yonder, is a Methodist church. The Methodists believe that for the evil you do on earth you will burn in hell after death. The second church belongs to the Baptists, who believe that the fire of hell can be put out by immersing the sinner in water through baptism. The third church is that of the Universalists, who hold that the fires of hell aren't real anyway but are merely a false alarm. I guess there isn't any difference between them, though."

It is the same way with God. We may all look upon Him in a slightly different light, but fundamentally He is the same to all of us, no matter how we express our thoughts of Him. The essential thing is that there is some divine power directing and guiding us. The worship of this divine power is the third constant to which we may turn.

To illustrate that the externals may change but the internals remain unchanged, I should like to conclude by recalling a trip I made several years ago from Buffalo to Ontario for the purpose of visiting my grandfather's house. I had spent many happy days in this home as a child, and I knew well the old building with its black shingles and large wooden doors and windows. As we entered Ontario I had a full vision of my grandfather's house with its wide floor boards and the occasional bumps in the wood where the roughhewn timbers had been joined together by square copper nails. I thought of the great big feather bed in which I had taken refuge during thunderstorms, and I could almost smell the dried apples which were kept in a box near the stove. I loved the old house because I had spent so many happy hours there and was looking forward to seeing it again.

But when I came to the plot of ground on which I was sure the home had stood, there was nothing to be seen but an empty field. I asked a native if he knew what had happened to Mortimer Heath's house. He told me it had been moved over to another section of town, and he gave me directions for finding the house. When I had followed these directions, I found myself before a bright yellow

(*Concluded on page 608*)



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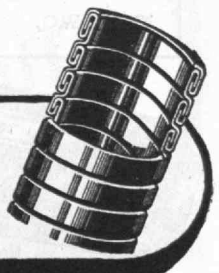
For full details and engineering data, write for Bulletin 58G.

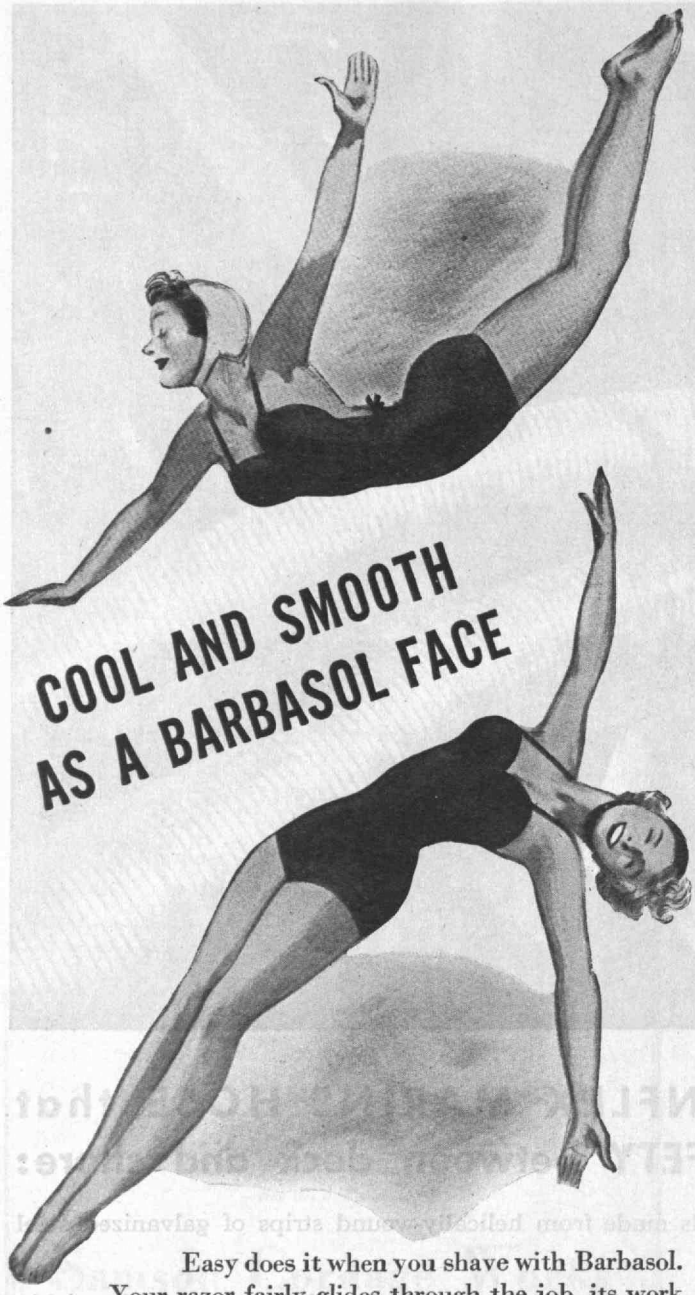
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VARIABLES AND CONSTANTS

(*Concluded from page 606*)

stucco house with tar paper over its roof, but my grandfather's house was nowhere in sight. A lady was on the lawn, and I asked her where my grandfather's house was. She informed me that the stucco house was what I sought. My heart sank, and I replied, "No, this isn't Mortimer Heath's house, for I knew that old house well."

"Well," she replied, "we have put a new cellar under it, added a porch and the tar-paper roof, and replaced the weather-beaten boards with stucco, but this is the house you are searching for."

"No, it is not the same house," I said as I turned to go.

But the lady called me back and invited me to see the inside of the house. She showed me one of the rough-hewn beams which my grandfather had made. I felt the axe marks on the hand-wrought beam which, as years before, was still exposed to view. Yes, this was my grandfather's house. It was clear that no matter how much the outside of that old house had changed, it was impossible to change the interior.

Thus we find that in a world of many variables, the constants are work, love, and worship. These remain unchanged, and to these we may look for guidance throughout our lives. Work, love, and worship — in a world of variables, these are the constants.

SIGNIFICANT CONTACTS

(*Continued from page 566*)

and with more time for original work. This would mean raising the average annual gift to $50 for each Alumnus — the average that each recipient of the Technology Loan Fund received and is repaying. In 40 years of graduate life this would be a total of $2,000, even then less than the amount that each Alumnus is indebted to the Institute for the cost of his education. This would enable Technology in the future to do constantly more far-reaching work on a broader and more democratic basis. It asks from each who has received its benefits a very modest gift, only a very small percentage of his income — on the average, about 0.7 of 1 per cent. Furthermore, it is a much sounder basis, as probably in the future we cannot rely on large gifts such as those from the mysterious Mr. Smith, later disclosed as the Institute's generous friend, George Eastman.

My thought for the future of the Institute is that the number of students and the number of Alumni is now the optimum. The Institute should always have such a high standard that students and professors would seek to come to it. This is true of the undergraduate work and especially of the graduate school. Our greatest contribution is in the quality of the education we offer, a reflection of our Faculty and the high standards and serious purpose of our student body and Alumni.

The elements that make an organization or institution strong are not its endowment, buildings, or equipment, essential as they are, but its men, its faculty, its student body — their ideas and ideals, their spirit; and this is true even more so of its Alumni. Now, 50 years after graduation and, having been close to Technology's growth and development, I feel this the more.

Technology, under its great leader, Dr. Compton, and

(*Concluded on page 610*)

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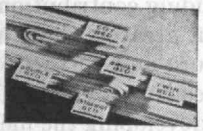
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SIGNIFICANT CONTACTS

(*Concluded from page 608*)

its many Alumni have made outstanding contributions in this war to our decisive victory. But great as these have been, their contribution in the future and to the peace will be greater. Their contribution leads to a greater freedom of the individual, especially in developing the men of exceptional ability and leadership so greatly needed in a democracy. Democracy particularly needs clear-visioned and farseeing leaders so that the development of the nation may be along lines of setting the worth of the individual first, so that each may have the greatest freedom to develop his own capabilities, initiative, and enterprise. Freedom for the individual and for opportunity and responsibility through which he may develop his own life is the greatest potentiality for the progress of a truly democratic people. This has been demonstrated in this country in times of peace and magnificently shown in this war.

In peace it will continue in the path of freeing the individual from drudgery to an ever-increasingly higher standard of life on the part of our citizens, materially and spiritually. This is what we can confidently look forward to. It means the fewest possible compulsions and prohibitions — only those that are necessary for social benefits for all our people.

Research and industry will go further, and even greater accomplishments may surely be expected. This development is young, and the need both here and abroad offers great opportunities. This program requires imagination, courage with restraint, and determination.

THE TREND OF AFFAIRS

(*Continued from page 558*)

skin over a period of days. When injected repeatedly for a period of a few months, alcoholic extracts of poison ivy partially desensitize some people to normal contact with the irritant. Many people are apparently not helped by this desensitization procedure. Certain medical men hold that the injection of poison ivy antigen (alcoholic extract of poison ivy) is of great help. Relief to the patient is claimed in one to three days, and a cure is effected by one to three injections over a period of a few days. It must be pointed out that even without antigen injections many patients show equally good improvement over this period of time. While possibly certain people are helped by the injections, there are doubtless many who are not.

At the Institute, studies on poison ivy have progressed along somewhat different lines. It appeared that under normal conditions the toxic irritant which caused reddening and itching of the skin was eventually rendered harmless by the activity of human tissues. The most likely agents effective in this action are the tissue enzymes, the biocatalysts responsible for most of the chemical reactions which proceed in the body. A study of the structure of typical irritant compounds such as those represented in Fig. 1, reveals that the parts of these molecules most sensitive to attack by enzymes and oxidizing agents are the hydroxyl groups on the ring. These might be converted to quinones by either oxidizing enzymes or chemical oxidants. Since the toxic action is largely determined

(*Continued on page 612*)

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THE TREND OF AFFAIRS

(*Continued from page 610*)

by the presence of hydroxyl groups, replacement of these by quinone groups might render the molecule relatively innocuous. Institute experiments were developed in three major steps. As a check on the hypothesis that tyrosinase attacks poison ivy irritants, the first step involved chemical tests designed to show that the irritants could be oxidized by tyrosinase. The second step involved the demonstration that the poison ivy properties are simultaneously destroyed by such oxidation. The last step is

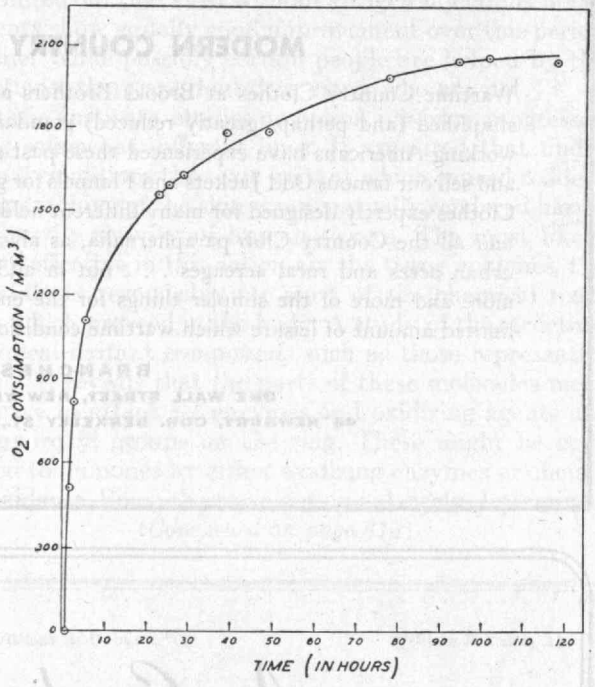


Fig. 2. Clue to the alleviation of poison ivy suffering may be associated with the marked oxidation of the vesicant produced by tyrosinase obtained from mushrooms. In test tube experiments at body temperature progressive oxidation required about a week for completion.

concerned with the destruction of poison ivy toxins on the human skin and a demonstration that dermatitis can be alleviated or cured by the use of tyrosinase.

Tyrosinase has been used in oxidizing various benzene

(*Concluded on page 614*)

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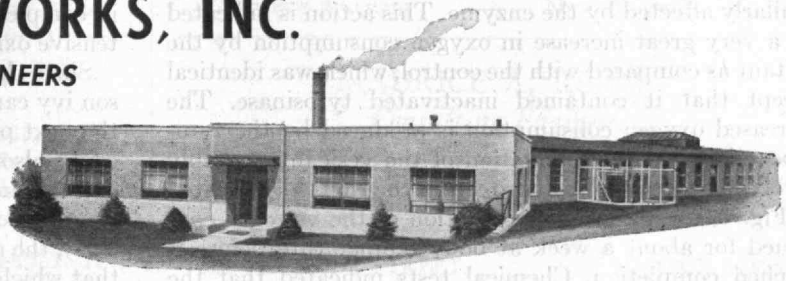
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THE TREND OF AFFAIRS

(*Concluded from page 612*)

derivatives which contain a hydroxyl in the ring. From analogy of these compounds and the poison ivy irritant compounds it seemed possible that tyrosinase might also oxidize the latter group. Tyrosinase is widely distributed in plants and animals, but its best source is mushrooms, from which it has been prepared in pure crystalline form by J. F. Nelson of Columbia University, who showed it to be a copper protein compound.

Chemical experiments with crude preparations made at M.I.T. and with highly purified tyrosinase [2] from the common edible mushroom (*Psalliota campestris*) indicate marked oxidation by the enzyme of concentrated poison ivy, poison oak, and cashew nut oil. The active purified skin irritants, urushiol, anacardic acid, anacardol, and three-geranyl catechol, were also found to be similarly affected by the enzyme. This action is indicated by a very great increase in oxygen consumption by the irritant as compared with the control, which was identical except that it contained inactivated tyrosinase. The increased oxygen consumption is produced by the tyrosinase, indicating an oxidation of the vesicant probably involving the phenolic hydroxyls in the ring. As indicated in Fig. 2, the progressive oxidation of the vesicant continued for about a week at body temperature before it reached completion. Chemical tests indicated that the tyrosinase had produced an appreciable decrease in the amount of phenolic hydroxyl groups present, presumably by oxidizing them to quinones. The consumption of oxygen, the production of pigmentation, and the disappearance of phenolic hydroxyl groups gave promise that the chemical changes in the toxic molecule produced by tyrosinase might hold the clue to alleviation of ivy suffering.

The next problem, therefore, was to determine whether or not the chemical changes elicited by tyrosinase in the toxic molecules in the above chemical experiments produced any effect upon the ability of the irritant compound to produce reddening, swelling, and itching of the skin. For comparison in all cases, we used simultaneously as a control the irritant which had been treated identically except that inactivated tyrosinase was used instead of the active enzyme. Experiments were performed using both human and sensitized guinea pig skin. Usually about one milligram of active material dissolved in ether was spread on an area about the size of a penny. Reaction of the skin was apparent in a few hours or in one to three days, depending on the activity of the preparation and the relative sensitivity of the individual. In most cases there was a striking difference between the effects of the control and the experimental. The poison ivy produced was much more severe for the extract previously treated with the inactive enzyme than that treated with the active tyrosinase. In many cases, both with humans and with guinea pigs, the experimental preparation elicited no erythema whatever, indicating that inactivation by the tyrosinase had been very extensive. These skin tests, in complete agreement with chemical data, indicate extensive oxidation and inactivation by tyrosinase in vitro.

Since the preceding experiments clearly show that poison ivy can be inactivated by tyrosinase in the test tube, the next problem was to see whether or not the reaction could also occur on the human skin. When poison ivy extract and partially purified tyrosinase were applied simultaneously to the skin (kept moist during the reaction), the dermatitis which developed was much less than that which appeared on an adjacent area of skin to which the poison ivy extract without the enzyme was applied.

From these studies it would seem that tyrosinase might be useful in the treatment of poison ivy dermatitis if applied within a few hours after exposure and before reddening and itching of the skin have developed. It is doubtful whether the enzyme treatment could be of any help in the later stages of the poisoning, when the irritant agents have become inaccessible by penetrating into the deeper layers of the skin. Experiments are in progress to determine whether the subcutaneous injection of sterile tyrosinase into the inflamed area is effective.

[2] Furnished through the kindness of J. F. Nelson.

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Interim Report

THE sixth year of the Fund is in its third month as this is written. As it will be the last chance to reach the readers of The Review until fall, an interim report on progress to date seems in order. Here it is:

TOTALS: By the 15th of June, 5,239 of us had contributed $82,400.

COMPARISONS: Last year at this same time, 5,084 Alumni had given $75,797. That means we're ahead so far, not many in numbers, only about 150, but over $6,600 in amount. That's encouraging, but the differential is not sufficient to warrant a great deal of cheering as yet.

QUOTAS: Class quotas give a very definite yardstick by which to measure progress. Already 1894, 1899, and 1900 have exceeded their quotas in amount, and several more are nearing the 100 per cent mark. That's good!

AVERAGE: Last year the average contribution was $15.60. This year it stands right now at $16.05.

PAST CONTRIBUTORS: Almost 10,000 Alumni contributed in 1944–1945 to make it the most successful year by far. You, as shown by the fact that you are receiving The Review, were one of that goodly number. By your action you demonstrated your willingness to assist actively in maintaining and increasing the Institute's ability to be of maximum service. The future of the Fund is, in large part, in the hands of men like yourself who recognize the need and are able and willing to help satisfy it. More than 4,400 of last year's contributors have not as yet given in 1945–1946. If you are one of that number, why not join with us again, now?

TECHNOLOGY MEN IN ACTION

M.I.T. MEN AT WAR

Up to June 15 over 8,461 Institute Alumni, including 34 Admirals, 8 Commodores, and 91 Generals were recorded as being in the active naval or military services of the United Nations. Among the new promotions this month are Rear Adm. William H. Smith '15, Commodore Augustus J. Wellings '27, and Commodore Dixie Kiefer '29. There were 175 Alumni who had been decorated, and 137 who had made the supreme sacrifice.

Additions and corrections to the listings which have previously appeared, beginning with the issue of November, 1942, will continue to be published in future issues of The Review. As a matter of convenience, promotions and corrections in the rank previously given are grouped under a single heading, "Changes in Rank." The Review Editors are greatly indebted to the many Alumni and other readers who are continuing to co-operate so helpfully in reporting inevitable errors of omission and commission which they note in these listings.

NEW DECORATIONS

1911 de Florez, Luis, *Capt.*, U.S.N., Legion of Merit.

1923 ★Fleming, Robert W., *Capt.*, U.S.N., Purple Heart.
Kittrell, Clark, *Col.*, U.S.A., Legion of Merit — for engineering work at Pearl Harbor; Oak Leaf Cluster — for meritorious service in North Africa; Bronze Star — for engineering activity in southern France.

1932 Williams, Myron L., *Lt. Col.*, U.S.A., Bronze Star.

1936 Austin, John C., *Lt. Col.*, U.S.A., Bronze Star — for meritorious achievement in operations against the enemy in New Guinea, the Admiralty Islands, Dutch New Guinea, and the Netherlands East Indies.

1938 Barnaby, Donald R. E., *Lt.(j.g.)*, U.S.N., Bronze Star — for work in connection with saving the *U.S.S. Franklin.*

1941 ★Shepard, William M., *Capt.*, U.S.A., Silver Star, posthumously — for gallantry in action in Italy.

1942 Canney, Frank C., *Lt.*, U.S.N., Bronze Star — for services on the *U.S.S. Franklin.*
Plant, Howard L., *Capt.*, U.S.A., Bronze Star — for meritorious service in south-central China.

10–44 Knight, Richard A., *2nd Lt.*, U.S.A., Second Oak Leaf Cluster to Air Medal.

6–45 Kessler, Ira, *2nd Lt.*, U.S.A., Air Medal — for meritorious achievement during aerial flights over enemy territory.
Wood, George A., Jr., *Lt.*, U.S.A., Air Medal — for meritorious achievement in combat aerial flights in the Mediterranean area.

NEW LISTINGS

U.S.A.

1913 Smith, Edward E., *Maj.*
1918 Elliott, Stuart E., *Capt.*
1921 Merrill, Edgerton, *Col.*
1924 Loring, Herbert F., *Maj.*
1927 Pinkerton, John M., *Capt.*
1933 Gulliver, Robert H., *T.5.*
1934 Boykin, Edward M., *Maj.*
1935 Olmstead, Helen P., *1st Lt.*
1936 Cloyd, Marshall S., *Maj.*
★Robinson, William H., *Pvt.*
1937 Reid, Lawrence T., *Sgt.*
1938 Friedman, Howard, *Capt.*
1939 Logan, Loren G., *Lt.*
Warden, Henry E., *Lt. Col.*
1940 Mackler, Bruce, *Lt.*
1941 Flowers, Daniel F., *Capt.*
★Shepard, William M., *Capt.*
1942 Anisz, Erwin, *Pvt.*
Glaser, Arnold H., *Pfc.*
Hoffman, Richard W., Jr., *Pfc.*
1943 Knauer, Warren L., *Lt.*
2–44 Bradshaw, Alvin L., *Pvt.*
Brown, Steven H., *Sgt.*
Corty, Claude, *Pfc.*
Figgis, Haugan W., *1st Lt.*
6–45 Lowry, Emmert M., Jr., *Corp.*
Woestendiek, Eugene C., *Pvt.*
2–46 Belknap, Norton, *Lt.*
Christopher, Howard W., *Pvt.*
Dzendolet, Ernest, *Pvt.*
Hale, Daniel P., *Pvt.*
Hewes, George R., *Cadet*
Laxton, Robert P., *Pvt.*
Lemnios, William Z., *Pfc.*
Leonard, Robert B., *Pfc.*
Lippitt, David L., *Pvt.*
Martin, Leo J., *Pvt.*
Mastroeni, Charles, *Sgt.*
Moir, James G., Jr., *Pvt.*
O'Brien, Robert W., *Pvt.*
Soini, Herbert E., *A.S.*
Spitz, Peter H., *Pvt.*
Sweeney, George C., Jr., *Pvt.*
Wright, Kendall, *A.C.*

U.S.N.

1930 Gray, William C., *Lt.*
Griffith, Arthur W., *Lt.*
Scott, Ralph E., *Lt.(j.g.)*
1932 Stewart, Albert A., *S.1c.*
1934 Nichols, Joel M.
1936 Walker, Robert H., *Y.3c.*
1937 Vogel, Paul A., *S.1c.*
1938 Armat, Thomas, Jr., *Lt.*
1939 Bliss, Ames, *S.1c.*
1940 Schnorr, William J., *Lt.*
1941 McGee, Elwood L., *Ens.*
1942 Davies, Walter E. I., *Ens.*
Falco, Eugenio, *S.1c.*
Fields, Arnold C., *S.1c.*
1943 Cramer, Harrison E., *Ens.*
2–44 Wade, Richard G., *1st Lt.*
10–44 Davidoff, Joseph B., *Mid.*
English, Richard B., *Ens.*
Fryer, Edward R., Jr., *Mid.*
Gray, Donald D. A., *Lt.*
Harwick, Warren J., *Mid.*
Helve, John H., *Mid.*
Henderson, William W., *Ens.*
Holt, Edward C., Jr., *Mid.*
McKee, Lewis W., *Ens.*
Maffei, Richard, *S.1c.*
Nickle, Henry J., *Mid.*
Nietert, Robert W., Jr., *Mid.*
Shipton, James M., *Mid.*
6–45 Apple, Miles E., Jr., *S.1c.*
Benson, Torsten E., *A.R.M.3c.*
Browning, John V., *R.T.3c.*
Busby, Julian M., *Ens.*
Cunningham, John C., *A.S.*
Davidson, Albert J., *S.1c.*
Davis, Harry F., *A.R.T.3c.*
Devine, Robert W., Jr., *F.1c.*
DiBagno, Geno, *A.S.*
Evans, Richard S., *Ens.*
Gallagher, Thomas J., *R.T.3c.*
Geyer, John H., *Aer.3c.*
Gould, Robert H., *R.T.3c.*
Haddox, Roy, Jr., *Ens.*
Harnsberger, Theodore W., Jr., *M.M.3c.*
Harwick, Warren J., *Mid.*
Harwood, Sanford E., *Ens.*
Hill, Jacques A. F., *S.2c.*
Hopkins, Joseph H., Jr., *S.1c.*
Hosler, Charles L., Jr., *Mid.*
Huhtala, Olavi A., *Mid.*
Jorgenson, Richard N., *Ens.*
Joseph, David, *S.1c.*
Landwehr, Robert C., *R.T.3c.*
Lawrence, Ford A., *R.T.3c.*
Lemmer, Benjamin L., Jr., *A.R.T.3c.*
McDonald, James E., *Ens.*
Meckley, Daniel G., III, *A.S.*
Mooney, Richard S.
Pragnell, Walter L., *R.T.3c.*
Reusch, William J., Jr., *Ens.*
Riordan, William J., *R.T.3c.*
Schanne, Francis A., *Mid.*
Smith, Gilman B., III, *Ens.*
Steketee, Campbell H., *Lt.(j.g.)*
Sunseri, Frank A., *Ens.*
Symonette, Robert H.
Tucker, Alvin Z., *Ens.*
Veith, Ferdinand S., *Mid.*
Werley, Ralph E., Jr., *Ens.*
Williamson, Harry W., *Lt.(j.g.)*
Zacharchuk, Wallace V., *R.T.3c.*
2–46 Alderman, Sidney S., Jr., *S.1c.*
Bailey, George B., *S.1c.*
Bartlett, Wayne D., *A.S.*
Begley, Robert S., *S.1c.*
Burke, Vincent W., Jr.
Butter, Charles W., *S.1c.*
Cohen, Robert, *A.S.*
Dahinden, Duane T., *S.1c.*
Dunn, Charles E., *R.T.3c.*
Fuller, Frisbee J.
Hansen, Charles, *A.S.*
Harrington, Francis D., Jr., *S.1c.*
Hayes, Everett S., *S.1c.*
Hughes, Robert E., *Mid.*
Humes, Harold L., Jr., *S.1c.*
Johnson, Henry H., 3rd., *Ens.*
Kramer, Albert R., *S.1c.*
Leming, John W., Jr.
Lowe, Willard O., *Ens.*
McCleary, Richard C., *Ph.M.3c.*
McKee, William J., Jr., *Aer.M.3c.*
McKinistry, Robert B., *A.S.*
Matthews, Herbert M., *S.1c.*
Neff, Harold M., Jr., *S.1c.*
Owings, Malcolm W., Jr., *H.A.1c.*
Parke, Harry G., *R.T.3c.*
Pepke, Edward B., *S.1c.*
Plamjack, Harold J., *S.1c.*
Pooler, Francis, Jr., *S.1c.*
Reid, Thomas, Jr., *S.1c.*
Rich, Elmer, Jr., *A.S.*
Scalzi, Francis P., *Mo.M.M.3c.*
Sciulla, Amico V., *R.T.3c.*
Seibert, Walter E., Jr., *R.T.3c.*
Silvers, Swanson, *E.M.3c.*
Tod, David, *A.C.*
Welch, Edward F., Jr., *Mid.*

U.S.M.C.

1943 Parran, Benjamin III, *2nd Lt.*
6–45 Ayer, Richard B., *Pvt.*
Ely, Hanson E., *Pfc.*
Russell, William A., Jr., *Corp.*
Spencer, Raymond H., *Pvt.*
2–46 McGrath, Kenneth W., *Corp.*

BRAZIL

Navy

6–45 de Andrade, Ayres C., *Lt.*

CHANGES IN RANK

U.S.A.

1916 Gillis, Marcel A., *Lt. Col.* to *Col.*
1918 Franklin, Stanley H., *Capt.* to *Maj.*
1921 Morris, Richard H., *Capt.* to *Maj.*
1922 Brill, Clinton B. F., *Lt. Col.* to *Col.*
Brokaw, Charles E., *Lt. Col.* to *Col.*
Bryden, Colby W., *Capt.* to *Maj.*
Speir, Godfrey B., *Maj.* to *Lt. Col.*
1923 Davis, Walton T., *Capt.* to *Maj.*
1925 Duell, Clifford C., *Lt. Col.* to *Col.*
Kraus, Walter F., *Brig. Gen.* to *Maj. Gen.*
1926 Johnson, Richard W., *1st. Lt.* to *Capt.*
Van Buren, Francis R., *Capt.* to *Maj.*
1927 Muchnic, George, *Maj.* to *Lt. Col.*
1928 Regad, Eugene D., *Lt. Col.* to *Col.*
Scott, George W., *Lt.* to *Capt.*
1931 Simon, Frank H., *Capt.* to *Maj.*
1932 Johnson, Stanley L., *Capt.* to *Maj.*
Saltonstall, Nathaniel, *Capt.* to *Maj.*
Seiler, Arthur J., *Lt. Col.* to *Col.*
Williams, Myron L., *Maj.* to *Lt. Col.*
1933 Brown, Stanley L., *Sgt.* to *Lt.*
Forbes, Henry W., *Lt.* to *Capt.*
Manley, Kirtland, *Corp.* to *T.4.*
Marshall, Courtenay D., *Capt.* to *Maj.*
1934 Reynolds, Hereward A., *2nd Lt.* to *Capt.*
Stevens, Malcolm S., *Capt.* to *Maj.*
Duff, Alan D., Jr., *Lt.* to *Capt.*
Johnston, Philip P., *Capt.* to *Lt. Col.*
Taubman, Edward H., *Lt.* to *Capt.*
Winiarski, Kasmierz J., *Capt.* to *Maj.*
1936 Estabrook, Vincent T., *Capt.* to *Maj.*
Thomas, Ariel A., *Capt.* to *Maj.*
1937 Mather, John P., *Capt.* to *Maj.*
Nedbor, Robert, *Pvt.* to *2nd Lt.*
Newman, James A., Jr., *Lt.* to *Maj.*
1938 Barbarossa, Nicholas L., *Capt.* to *Maj.*
Parish, Claude L., *1st Lt.* to *Capt.*
Scalingi, Ciro R., *Maj.* to *Lt. Col.*
Therkelsen, Ernest B., *Lt.* to *Capt.*
1939 Howland, James C., *Capt.* to *Maj.*
Leavitt, Minard A., *2nd Lt.* to *Capt.*
Morgan, Walter H., *Sgt.* to *T. Sgt.*
Stewart, Herbert F., *Lt.* to *Capt.*
1940 Bowman, Thomas P., *Capt.* to *Maj.*
Burr, Henry A., *Capt.* to *Maj.*
Connelly, Stanley W., *Capt.* to *Lt. Col.*
Dewey, Bradley, Jr., *1st Lt.* to *Capt.*
Hoke, John I., *Corp.* to *Sgt.*
Klivans, Norman R., *Capt.* to *Maj.*
Laschever, Norman L., *Lt.* to *Capt.*
Ross, Donald W., *Capt.* to *Maj.*
Scott, Norman R., *Capt.* to *Maj.*
Van Sciver, Wesley J., *Capt.* to *Maj.*
1941 Diddlebock, William H., *Maj.* to *Lt. Col.*
Dore, Arthur J., *Lt.* to *Capt.*
Fish, David H., *Maj.* to *Lt. Col.*
Gill, Richard M., *Maj.* to *Lt. Col.*
Gunderson, Clarence H., *Capt.* to *Lt. Col.*
Planje, Theodore J. M., *2nd Lt.* to *Capt.*
Smolensky, Stanley M., *Capt.* to *Maj.*
Stevens, Clarence E., Jr., *Lt.* to *Capt.*
Turansky, Walter, *Lt.* to *Capt.*
Vandervoort, Norman F., *1st Lt.* to *Capt.*
1942 Blanchard, Lloyd G., *Lt.* to *Maj.*
Downing, Albert G., *Capt.* to *Maj.*
Gartland, Edward V., Jr., *1st Lt.* to *Capt.*
Hayward, Clyde F., *Capt.* to *Maj.*
Kaplan, Maxwell H., *Lt.* to *Capt.*
Kunz, Robert C., *Capt.* to *Maj.*
Mulvaney, John J., *2nd Lt.* to *Capt.*
Price, Myron E., *Sgt.* to *S. Sgt.*
Reed, Wallace P., *2nd Lt.* to *Capt.*
Ruthven, James, Jr., *Lt.* to *Capt.*
Schaeffer, Daniel M., *1st Lt.* to *Capt.*
Shafer, Robert J., *2nd Lt.* to *Maj.*
Stansfield, Donald H., *Pvt.* to *Corp.*
Wengenroth, Reece H., *Lt.* to *Capt.*
Woodbury, Max A., *Lt.* to *Capt.*
1943 Brooks, Douglas L., *2nd Lt.* to *1st Lt.*
Bryant, William B., *1st Sgt.* to *Lt.*
Crocker, Gage H., *2nd Lt.* to *1st Lt.*
Kempster, John H., *Corp.* to *2nd Lt.*
Shaknov, Irving, *2nd Lt.* to *1st Lt.*
Sprenger, David F., *A.C.* to *Lt.*
2–44 Adsit, Ray M., *Pvt.* to *T.5.*
Beecher, Norman, *Pvt.* to *Lt.*
Benjamin, Roland, Jr., *Pvt.* to *Corp.*
Bromfield, Burton A., *Pvt.* to *T.4.*
Carmody, Thomas W., *Pvt.* to *2nd Lt.*
Caswell, Randall S., *Pvt.* to *1st Lt.*
Church, Dudley F., *Corp.* to *2nd Lt.*
Coffey, William N., *Corp.* to *2nd Lt.*
Greenman, Norman L., *Pvt.* to *Pfc.*

Hodgon, Earle B., *Pvt.* to *2nd Lt.*
Ilfeld, Robert M., *Pvt.* to *Pfc.*
Kogan, Jay M., *Pvt.* to *2nd Lt.*
Lynch, Daniel S., *Pvt.* to *2nd Lt.*
Neff, James A., *Pvt.* to *1st Lt.*
Toland, John T., *Pvt.* to *1st Lt.*
Varnerin, Lawrence J., Jr., *2nd Lt.* to *1st Lt.*
Woodworth, Chester L., *Pvt.* to *T.5.*

10–44 Aquadro, Robert A., *Pfc.* to *T.5.*
Bent, Gardner L., *Pvt.* to *2nd Lt.*
Collins, Lathan H., Jr., *Pvt.* to *Pfc.*
Crooks, Robert G., *A.C.* to *2nd Lt.*
Hoehn, Scott J., *Pvt.* to *Corp.*
Iskra, Frank J., *Pfc.* to *2nd Lt.*
Jahn, Robert C., *Pfc.* to *T.5.*
Kelly, Joseph V., Jr., *Pvt.* to *Sgt.*
Kordys, Stanley C., *Pfc.* to *Sgt.*
Mitchell, Frank L., Jr., *Pvt.* to *Sgt.*
Nelson, Harold B., *Pvt.* to *2nd Lt.*
Pasher, William V., *Pfc.* to *Sgt.*
Rockholz, William L., *Pvt.* to *Pfc.*
Smith, Roger D., *Pfc.* to *2nd Lt.*
Sonnenblick, Jack E., *Pvt.* to *Lt.*

6–45 Brown, David W., *Corp.* to *Lt.*
Enos, John L., *Pvt.* to *2nd Lt.*
Gaillard, David duB., II, *Pvt.* to *2nd Lt.*
Goppelt, John W., *Pvt.* to *Pfc.*
Havener, Arthur R., Jr., *Corp.* to *O.C.*
Leva, Jerome, Jr., *Corp.* to *Sgt.*
Loomis, George P., Jr., *Pvt.* to *Pfc.*
McDonald, William P., *Corp.* to *Sgt.*
Mathews, Charles P., *Pvt.* to *Corp.*
Morris, James B., Jr., *Pvt.* to *Pfc.*
Morse, Richard F., *Pfc.* to *Corp.*
Mott, Robert R., *Pfc.* to *2nd Lt.*
Tilden, Sydney G., Jr., *Pvt.* to *Pfc.*

2–46 Clements, George F., Jr., *A.C.* to *Lt.*

U.S.N.

1915 Smith, William H., *Capt.* to *Rear Adm.*
1926 Homsey, Samuel E., *Lt.* to *Lt. Comdr.*
1927 Hammond, Joseph W., *Lt. Comdr.* to *Comdr.*
Wellings, Augustus J., *Capt.* to *Commo.*
1928 Morgan, Armand M., *Lt. Comdr.* to *Capt.*
Pearson, John B., Jr., *Lt.* to *Capt.*
1929 Hutchinson, Howard B., *Comdr.* to *Capt.*
Kiefer, Dixie, *Capt.* to *Commo.*
1930 Orville, Howard T., *Lt. Comdr.* to *Capt.*
1932 Zimmerman, Walter E., *Lt. Comdr.* to *Capt.*
1933 James, Ralph K., *Comdr.* to *Capt.*
Millard, Maxwell D., *Lt.* to *Lt. Comdr.*
Rickards, Leighton R., *Lt.(j.g.)* to *Lt.*
1935 Helwith, Edward E., *R.T.2c.* to *R.T.1c.*
King, Arthur M., Jr., *Ens.* to *Lt.(j.g.)*
1936 Brown, Harold A., *Lt.* to *Lt. Comdr.*
Coffin, John J., *Ens.* to *Lt.(j.g.)*
Trescott, Charles E., *Comdr.* to *Capt.*
1937 Hanlon, John J., *Ens.* to *Lt.(j.g.)*
1938 Bethea, James S., *Lt.* to *Comdr.*
Hand, Robert S., *Ens.* to *Lt.*
Hawkes, Albert J., *Mo.M.M.1c.* to *C.Mo.M.M.*
Mittet, Holger P., *Ens.* to *Lt. (j.g.)*
Roe, Jack W., *Lt.* to *Comdr.*
Zuckerman, Bernard, *S.1c.* to *R.T.2c.*
1939 Bennett, Bradley F., *Lt. Comdr.* to *Comdr.*
Friedman, Charles, *Ens.* to *Lt. (j.g.)*
Hurt, Percy F., *Ens.* to *Lt.(j.g.)*
Mullin, David W., *Ens.* to *Lt. (j.g.)*
1940 Lee, Francis L., *Ens.* to *Lt.*
Wheelock, Philip S., *Lt.(j.g.)* to *Lt.*
1941 Brown, Bertram M., *Lt.(j.g.)* to *Lt. Comdr.*
Franklin, James G., *Lt. Comdr.* to *Comdr.*
Poskus, Alexander S., *Lt.(j.g.)* to *Lt.*
Senif, Howard Z., *Lt. Comdr.* to *Comdr.*
1942 Darling, Bradford, *Ens.* to *Lt. (j.g.)*
Erickson, Bernard E., *Ens.* to *Lt.(j.g.)*
McGinnis, Carl L., *Ens.* to *Lt. (j.g.)*
Nagel, Albert H., *Ph.M.2c.* to *Ph.M.1c.*
Skinner, Andrew H., Jr., *Ens.* to *Lt.(j.g.)*
1943 Bakker, Albert E., *Ens.* to *Lt. (j.g.)*
Bollinger, Howard M., Jr., *Ens.* to *Lt.(j.g.)*
Bullerjahn, Eduard H., *Ens.* to *Lt.(j.g.)*
Darnell, Victor C., *Ens.* to *Lt. (j.g.)*
French, Frank E., Jr., *Ens.* to *Lt.(j.g.)*
Graves, Gilbert S., III, *Ens.* to *Lt.(j.g.)*
Greenwald, Sidney F., *Ens.* to *Lt.(j.g.)*
Schantz, Edwin H., *Lt. Comdr.* to *Comdr.*

2–44 Chase, Dana C., *Ens.* to *Lt.*
Damsgaard, Kjeld, *A.S.* to *S.2c.*
Heilman, Paul M., II, *A.S.* to *Ens.*
★Pritchard, Elbert B., *Mid.* to *Ens.*

10–44 Biondi, Manfred A., *Mid.* to *Ens.*
Brumley, Corwin H., *A.S.* to *Ens.*
Cooley, William C., *A.S.* to *Ens.*
Klopfer, Edward L., *Mid.* to *Ens.*
Lamberton, Bruce A., *A.S.* to *Ens.*
Meyerhoff, Robert E., *A.S.* to *Ens.*
Phelan, Dennis J., *Mid.* to *Ens.*
Ricker, Harrington, *R.T.2c.* to *R.T.1c.*
Van Rennes, Albert B., *A.S.* to *Ens.*

U.S.C.G.

1933 Byrne, T. Gorman, *Ens.* to *Lt. Comdr.*
1936 Rosenfeld, George L., *Ens.* to *Lt.(j.g.)*

U.S.M.C.

1934 Malone, Kevin, *1st. Lt.* to *Capt.*
1943 Maples, Thomas K., *Pfc.* to *1st Lt.*

10–44 Gordon, Gerome, *Pvt.* to *2nd Lt.*
6–45 Clifford, John J., Jr., *Pvt.* to *Pfc.*
Taggart, Rush, Jr., *Pvt.* to *Pfc.*

RANKS NOT PREVIOUSLY PUBLISHED

2–44 Hong, Edward H., *R.T.3c.*, U.S.N.
Lamade, Ralph M., Jr., *2nd Lt.*, U.S.A.
MacDowell, Gordon P., *T.5.*, U.S.A.
Peck, Robert D., *1st Lt.*, U.S.A.

10–44 Bailey, David Z., *Ens.*, U.S.N.
Gassaway, James M., II, *2nd Lt.*, U.S.A.
King, Stephen B., *Cadet*, U.S.C.G.
Porson, Allan B., *Ens.*, U.S.N.

6–45 Baldwin, Stiles R., *R.T.3c.*, U.S.N.
Bradford, Raymond T., *A.S.*, U.S.N.
Hahn, Bradley, *Ens.*, U.S.N.
Kirchner, Otto E., Jr., *A.C.*, U.S.N.
Murdock, Robert W., *Mid.*, U.S.N.
Skogstad, Paul H., *2nd Lt.*, U.S.A.
Tancreto, Anthony E., *Lt.(j.g.)*, U.S.N.
Wood, George A., Jr., *Lt.*, U.S.A.

2–46 Anderson, Alden P., *R.M.3c.*, U.S.N.
Assaf, Nicholas D., *Pvt.*, U.S.A.
Casey, George W., 3rd, *Pvt.*, U.S.A.
Crowder, Herbert A., Jr., *2nd Lt.*, U.S.A.
Fleming, Joseph D., Jr., *Corp.*, U.S.A.
Gaultney, William L., *Q.M.3c.*, U.S.N.
Harrington, William J., *S.1c.*, U.S.N.
Knowlton, John A., Jr., *Pvt.*, U.S.A.
Miller, Herbert E., *A.R.T.3c.*, U.S.N.
Miller, John C., *A.C.*, U.S.A.
Newton, Leonard F., *Pvt.*, U.S.A.
Powsner, Edward R., *Pvt.*, U.S.A.
Rowen, Henry S., Jr., *R.T.2c.*, U.S.N.
Rowles, Milton J., *A.S.*, U.S.N.
Sleeper, Theodore K., *Ph.M.3c.*, U.S.N.

CASUALTIES

1923 *Englehart, Alva F., *Col.*, U.S.A.
★Fleming, Robert W., *Capt.*, U.S.N. — Luzon.
1929 *Jacob, Perry H., *Capt.*, U.S.A.
1936 ★Robinson, William H., *Pvt.*, U.S.A. — Belgium.
1941 ★Shepard, William M., *Capt.*, U.S.A. — Italy.
1942 †Baumann, Frederick W., Jr., *Lt.*, U.S.A. — over Tokyo.
**Gow, Arthur S., Jr., *Pvt.*, U.S.A. — Germany.
1943 †Van Burgh, Lisle, *Lt.(j.g.)*, U.S.N. — Pacific.
2–44 ★McKelvey, James R., *Ens.*, U.S.N.
★Pritchard, Elbert B., *Ens.*, U.S.N. — Pacific.
10–44 ★Burke, John F., *2nd Lt.*, U.S.M.C. — Iwo Jima.
6–45 *Carr, Robert S., *Cadet*, U.S.N. — in airplane crash at Pensacola.
★Hunt, Donald M., *2nd Lt.*, U.S.A. — France
2–46 **Gimenez, Ernest, *Pvt.*, U.S.A.
★Horne, Frank W., Jr., *Pfc.*, U.S.A. — Died of wounds following action in Germany.
★Karno, Tobias A., Jr., *Pfc.*, U.S.A. — Germany.
★Severson, Robert D., *Pfc.*, U.S.A. — Germany.

LIBERATED PRISONERS

1937 Bliss, Raymond W., *Lt.*, U.S.A. — during raid on Luzon.

★ Killed in Action † Missing in Action ‡ Prisoner of War * Died or Killed in Service ** Wounded

Posthumous Award of Silver Star To William M. Shepard '41

The material below is quoted from the official citation.

"William M. Shepard, 0394051, Captain, Infantry, United States Army. For Gallantry in action on 21 February 1945, near Cappla di Ronchididos, Italy. When, during an offensive, an attacking battalion had dug in for the night, with the plan of continuing the assault the following morning, Captain Shepard, battalion S-1, went forward at dawn to reconnoiter a location for a command post. As he moved into the front line area of a platoon, the enemy launched a strong counterattack on these positions, supported by intense artillery, mortar, and machine gun fire. Observing that the platoon, stunned by the sharp action, was able to make little concerted effort to beat off the attack, he boldly made his way through the fire, at great risk to his own life, to go from foxhole to foxhole, rally the men, and literally push them into action. When the platoon leader was killed, Captain Shepard took over complete leadership of the group, aggressively fighting until the counterattack was broken up by our own small arms and grenade fire. This unhesitating action at a critical moment, together with his gallant exhibition of personal bravery, distinguished Captain Shepard as being truly worthy of the finest traditions of the United States Army. His courage and quick thinking were inspirational and deserving of the highest commendation and praise. Captain Shepard was killed in a later action."

ALUMNI AND OFFICERS IN THE NEWS

Office

¶ For WALTER H. KILHAM '89, elected president of the Copley Society.

¶ For M. HERBERT EISENHART '07, elected chairman of the board of trustees of the University of Rochester.

¶ For BERNARD S. COLEMAN '19, appointed public panel member, at Denver, Colo., of the Ninth Region of the National War Labor Board.

¶ For GEORGE HANSON '20, serving as a regional vice-president, for North America, of the Society of Economic Geologists.

¶ For JOEL D. HARVEY '22, elected president of the board of trustees of the Brimmer and May School, Boston.

¶ For ROBERT P. RUSSELL '22, named a member of the nine-man civilian committee, known as the United States Strategic Bombing Survey, which is charged with analysis of the effect of air bombardment on the will and capacity of the enemy to resist.

¶ For HAROLD J. RYAN '26, chosen president of the New York chapter of the American Society of Heating and Ventilating Engineers.

From the Quills

¶ Of WALTER R. INGALLS '86, *Systems of Weights and Measures*, a pamphlet published by the American Institute of Weights and Measures.

¶ Of GERARD SWOPE '95, "Some Aspects of Corporate Management," in the *Harvard Business Review* for spring.

¶ Of PAUL W. LITCHFIELD '96, *Autumn Leaves; Reflections of an Industrial Lieutenant*, with foreword by JEROME C. HUNSAKER '12 and illustrations by Rockwell Kent, published by Corday and Gross.

¶ Of JULIUS A. FURER '05, Rear Admiral, United States Navy, "Scientific Research and Modern Warfare," in the United States Naval Institute *Proceedings*, Vol. LXXI, for March, and "Science Speeds War," in the *Shipmate* for April.

¶ Of ERNEST C. CROCKER '14, *Flavor*, first book in the new Food Technology Series by McGraw-Hill.

¶ Of VANNEVAR BUSH '16, "As We May Think," in the *Atlantic Monthly* for July, and "Teamwork and Democracy," in *Think* for June.

¶ Of LEWIS W. DOUGLAS '17, "What Shall We Do with the Ships?" in the *Atlantic Monthly* for April.

¶ Of ADRIAN J. GILARDI '22, *Get More Out of Life!*, Bruce Humphries.

¶ Of J. FREDERIC WALKER '25, *Formaldehyde*, a monograph in the American Chemical Society monograph series, Reinhold Publishing Corporation.

¶ Of RALPH S. BATES, staff, *Scientific Societies in the United States*, John Wiley and Sons.

¶ Of IRWIN W. SIZER, staff, assisted by CLEMENS E. PROKESCH, 6–45, "Inactivation of the Irritant Toxicants of Poison Ivy and Related Compounds by Tyrosinase," in *Science* for May 18.

Plaudits

¶ For FRANK W. LOVEJOY '94, recipient in April of the annual Civic Achievement award of the Rochester Rotary Club, "for his quality as a citizen of Rochester and for his long time influence on the life of the city. . . . The effect of his personality . . . is perhaps his greatest contribution to the civic life of this community."

¶ For CLARENCE D. HOWE '07, awarded the honorary degree of doctor of laws by Harvard University.

¶ For EMORY S. LAND '07, Vice Admiral, United States Navy, principal speaker at a dinner in Mobile on May 22, the 12th anniversary of Maritime Day, which, with launchings and luncheons and Admiral Land in the honor role, was devoted "to the industry and men whose span of ships across the Atlantic helped to bring a downfall for the Axis" and "to keep open the supply lines to America's allies."

¶ For HARDY CROSS '08, SAMUEL V. CHAMBERLAIN '18, EDWIN S. BURDELL '20, FREDERICK E. TERMAN '24, JOHN B. WILBUR '26, and NORMAN LEVINSON '33, who, with staff members MARTIN J. BUERGER, ARTHUR C. COPE, ROBLEY D. EVANS, JOHN R. LOOFBOUROW, and W. RUPERT MACLAURIN, were all elected fellows of the American Academy of Arts and Sciences at its annual meeting in Boston on May 9.

¶ For CHESTER L. DAWES '09, awarded the honorary degree of doctor of engineering by Northeastern University.

¶ For BRADLEY DEWEY '09, who received the honorary degrees of doctor of laws from Harvard University and doctor of science from Northeastern University.

¶ For JOHN TAYLOR ARMS '11, to whom the American Institute of Architects on May 23 awarded its fine arts medal, the highest honor the institute can bestow in the fine arts, other than architecture.

¶ For JEROME C. HUNSAKER '12, made an honorary member of the British Institution of Mechanical Engineers.

¶ For RUPEN EKSERGIAN '14, awarded the Louis E. Levy medal of the Franklin Institute for a paper on the reaction of fluids and fluid jets.

¶ For VANNEVAR BUSH '16, who received one of the three gold medals given by the National Institute of Social Sciences at its annual dinner in New York on May 23, "for distinguished services to humanity and in the field of science."

¶ For WILLIAM H. MCADAMS '17, awarded the honorary degree of doctor of science by the University of Kentucky.

¶ For FREDERICK E. TERMAN '24, awarded the honorary degree of doctor of science by Harvard University.

¶ For GREER ELLIS '38, recipient of the Franklin Institute's certificate of merit.

¶ For EUGENE J. MACKEY, JR., '39, whose design for a Court of Honor has been chosen as the World War II memorial in St. Louis. JOSEPH D. MURPHY '29 won second place in the competition of more than 100 drawings.

Public Appearance

¶ ERWIN H. SCHELL '12 addressed a meeting of the Hartford Industrial Foremen's Club on April 12 on "What's Ahead for Management and Labor."

¶ ALBERT C. WALKER '18 and ELLIOT B. GROVER '28 delivered papers entitled respectively "Abrasion Test for Textiles" and "Methods of Increasing the Productivity of Cotton Cards" at a series of regional meetings conducted by the Textile Research Institute in cooperation with the A. French Textile School, the Georgia School of Technology, and the North Carolina State College. The program on applied research, held on April 9 in Atlanta, Ga., on April 11 in Spartanburg, S.C., and on April 14 in Raleigh, N.C., was under the direction of GILES E. HOPKINS '26.

¶ DAVID J. ABRAHAMS '22 gave a talk illustrated with slides about "Houses of Today and Tomorrow" on April 16 before the Boston Real Estate Board.

¶ FREDERICK S. BLACKALL, JR., '22 discussed "Depreciation and Business Expansion" at a meeting of the Providence chapter of the National Association of Cost Accountants and the Rhode Island Association of Credit Men, in Providence on April 24. His address was published in the *New England War Bulletin* (of the N. E. Council) for April.

¶ H. W. MCCURDY '22 told the story of the wartime and peacetime production and postwar plans of the Puget Sound Bridge and Dredging Company,

of which he is president, at the Community Council luncheon of the Seattle Chamber of Commerce on June 1.

¶ KENNETH R. FOX '40 spoke on "Omnipresent Textiles" before the Rochester section of the American Chemical Society at its annual ladies' night on April 23.

¶ FLOYD E. ARMSTRONG, staff emeritus, gave the third lecture in a series of Sunday night forums on the general theme, "Blueprints for the Future," at the Highland Park Trinity Methodist Church in Detroit, Mich. His subject, on April 22, was "An Economist Looks at the Postwar World."

¶ FRANCIS O. SCHMITT, staff, discussed "The Physical Basis of Physical Medicine" on April 9 at the opening of the postgraduate course in physical medicine of the District Medical Society in Washington, D. C.

Electronics

¶ Papers by Technology Alumni published in Volume I of the *Proceedings* of the National Electronics Conference, edited by BEVERLY DUDLEY '35 with R. E. Beam and D. E. Foster, include the following:

¶ By JOSEPH H. COX '23, with G. F. Jones, "Power Rectifiers and Inverters."

¶ By ARTHUR L. SAMUEL '25, "Some Notes on the Design of Electron Guns."

¶ By HERMON H. SCOTT '30, "Audible Audio Distortion."

¶ By DONALD B. SINCLAIR '31, "Wide-Frequency-Range Tuned Circuits for High Frequencies."

¶ By DANIEL E. NOBLE '38, "Frequency Modulation in Portable and Mobile Communications Equipment."

¶ By DONALD J. GROVE '42, with John A. Hipple and W. M. Hickam, "Electronic Problems Involved in the Practical Application of the Mass Spectrometer."

Acoustics

¶ The Acoustical Society of America held its 30th meeting on May 11 and 12 at the Hotel Pennsylvania in New York. Technology men take an active interest in this society. EDWARD C. WENTE '14 is on its editorial board; ROBERT B. LINDSAY '24, FRANK MASSA '27, and RICHARD H. BOLT, staff, are members of its executive council. At the May meeting PHILIP M. MORSE, staff, served as chairman of the symposium on fundamental acoustic measurements. The following papers were presented:

¶ By RICHARD W. CARLISLE '26, with H. W. Koren, "Detection of Resonances in Vibratile Members by Measurement of Electro-Magnetically Induced Voltages."

¶ By FRANK MASSA '27, "A Working Standard for Sound Pressure Measurements."

¶ By CYRIL M. HARRIS '43, "Measurement of Acoustic Impedance by the Room Transmission-Characteristic Method."

¶ By RICHARD H. BOLT, staff, "Influence of Room Proportions on Normal Frequency Spacing."

¶ By PHILIP M. MORSE, staff, "Theory of the Effect of Wall Irregularities on the Distribution of Sound in a Room."

Notice in the News

¶ Of CHARLES-EDWARD A. WINSLOW '98, with a letter in opposition to Substitute House Bill 592–593, designed to change the license laws in Connecticut with respect to pharmacy.

¶ Of JOHN MILLS '09 and his retirement after 33 years with the Bell System, in the *Bell Laboratories Record* for May.

¶ Of DARD HUNTER, staff, and his paper museum, recently featured in a full-page appreciation by the *Pulp and Paper Bulletin*.

DEATHS

** Mentioned in class notes.*

¶ ROBERT H. RICHARDS '68, March 27.
¶ EMERY BROWN '79, June 8, 1944.
¶ WILLIAM C. BOND '80, May 9.
¶ BENJAMIN G. COLLINS '81, February 12.
¶ WILLIAM B. GOODWIN '82, March 15.
¶ JOHN G. LITCH '83, February 26.
¶ WALTER H. BUNCE '84, January 22.
¶ ARTHUR J. PURINTON '84, March 4.
¶ JOHN T. LYMAN '85, April 20.*
¶ ARTHUR C. WALLIS '85, May 26.*
¶ ARTHUR G. FOGG '86, January 29.
¶ FRANK S. WILSON '86, April 26.
¶ NATHANIEL I. BOWDITCH '88, April 3.
¶ CHARLES H. KNAPP '88, February 21.
¶ SAMUEL G. NEILER '88, February 28.
¶ ARTHUR F. BARDWELL '89, March 15.*
¶ WALTER G. PETER '90, February 9.
¶ BENTON STURGES '90, July 5, 1944.
¶ ALLAN RAMSEY '91, April 10.
¶ CHARLES O. BOURNE '92, February 21.
¶ SEVERANCE BURRAGE '92, April 11.
¶ GEORGE H. MAY '92, May 25.*
¶ ARTHUR G. PIERCE '92, February 13.*
¶ THEODORE H. SKINNER '92, September 3.*
¶ C. W. TAINTOR '93, June 12.
¶ FREDERICK B. ABBOTT '94, March 2.*
¶ ANNIE E. ALLEN '94, March 1.
¶ HARRIET GALLUP DE LANCEY '94, May 16.*
¶ HERBERT E. HEWITT '94, October.*
¶ WALLACE W. PRATT '94, April 30.
¶ LEONARD TUFTS '94, February 19.
¶ LOUISA A. WELLS '94, April 7.*
¶ GEORGE R. HOWARTH '95, February 22.
¶ ALTON H. RILEY '95, November 8.
¶ EUGENE C. HULTMAN '96, April 22.
¶ EDWARD A. MCGONIGLE '96, April 30.*
¶ MARY BAKER STRONG '97, October 13.*
¶ ELEANOR W. DAGGETT '98, September 24.*
¶ FREDERIC FURBISH '98, June 4, 1944.*
¶ JAMES R. GUY '98, December 4.*
¶ ALBERT R. SHEDD '98, November 5.*
¶ MARY J. THOMSON '98, October 21.*
¶ CLARENCE B. CLUFF '99, January 24.*
¶ HARVEY M. CUSHING '99, January 31.
¶ JOHN R. MORSE '02, March 21.
¶ GEORGE T. SEABURY '02, May 25.
¶ MILTON J. FIREY '03, March 19.*
¶ MAURICE A. FOGG '03, December.*
¶ RAYMOND HASKELL '03, April 6.*
¶ BENJAMIN NIELDS '03, February 26.*
¶ ROY E. DIMOCK '04, November 29.
¶ OTTO FAELTON '04, April 23.
¶ FREDERICK D. MABREY '04, March, 1944.
¶ ARTHUR J. SWEET '04, April 7.
¶ FREDERICK G. BENNETT '05, May 4.*
¶ RICHARD V. COLLINS '05, October 24.*
¶ ALBERT O. TRUE '05, March 9.
¶ ALFRED W. HERTZ '06, March 31.
¶ JOSEPH W. BUTLER '08, August 14, 1943.*
¶ GEORGE T. GLOVER '08, March 30.*
¶ JAMES R. NICHOLS '08, March 12.
¶ BENJAMIN W. DOW '09, May 5.*
¶ FRANKLIN B. LYONS '09, September 2.
¶ WILLIAM L. ENFIELD '10, March 21.*
¶ ALBERT V. DE FOREST '11, April 5.*
¶ SIDNEY A. PATCHETT '11, April 3.*
¶ DANIEL E. LEWIS '13, January 20.*
¶ CHARLES E. FOX '14, April 4.
¶ CHARLES W. OLESEN '14, June 3.
¶ JOHN H. H. TURNER '14, February 24.
¶ MARCUS HORBLIT '15, August 11.
¶ EDWIN F. BARRY '17, June, 1942.*
¶ SAMUEL SEWALL '17, February 27.
¶ MEYLERT BRUNER, JR., '20, January 28.
¶ CLYDE L. CHATHAM '21, June 7.*
¶ GEORGE W. BOWERS '24, August 4.
¶ HARRY R. HAMMOND '24, November 2.
¶ FREDERIC G. SKEYHAN '24, October 31.
¶ FREDERICK C. WAPPLER '24, November 26.
¶ JOHN W. JOYCE '28, March 24.
¶ GEORGE D. SHAVER '29, May 19.
¶ EDWARD S. ALLEE '32, May 31, 1944.*
¶ JOHN H. REED '40, December 26.
¶ PIERRE G. BARBEY '41, October 30, 1943.
¶ ARNOLD M. REYNOLDS '41, October 11.
¶ WALLACE B. CAUFIELD, JR., '42, December 31.*
¶ JOHN F. BURKE, 10–44, March 4.*
¶ WILLIAM E. NIGHTINGALE, 10–44, March 8.*

NEWS FROM THE CLUBS AND CLASSES

CLUB NOTES

Kanawha Valley Again

The second meeting of Technology Alumni in the Kanawha Valley of West Virginia was held at the Terrace Restaurant in Charleston on May 2. Forty-two men gathered to hear B. Alden Thresher '20, well-known Director of Admissions at M.I.T., tell of recent events and problems at the Institute. This dinner meeting was the direct result of an experimental smoker held earlier in the year. At that time a committee composed of William S. Brackett '23 of the Carbide and Carbon Chemicals Corporation, Russell P. Westerhoff '27 of Ford, Bacon and Davis, Inc., and Arthur W. Barry '37 of E. I. du Pont de Nemours and Company, had been appointed to plan a second get-together. This committee did such a good job of unearthing new residents and sending out effective publicity that 75 per cent of the Alumni in the area turned out for the meeting.

A brief discussion following the roast beef dinner revealed that the gathering was wholeheartedly in favor of the idea of a permanent organization. A committee of five was elected to arrange a third meeting and to draft a plan for formal organization. This committee consists of Dan B. Wicker '29 of the American Viscose Corporation, Roland D. Glenn '33 of the Carbide and Carbon Chemicals Corporation, Benjamin T. Woodruff '36 of E. I. du Pont de Nemours and Company, Edward T. Cook, Jr., '40 also of Du Pont, and Daniel G. Hulett '42 of Carbide. W. S. Brackett, who presided, introduced the main attraction of the evening, B. Alden Thresher. As director of admissions for the Institute, Professor Thresher brought the assembled Alumni a wealth of interesting data and information about Technology during and after the war. At the conclusion of his talk the floor was thrown open for questions, and the guest of honor was kept busy for an additional hour responding to the barrage of queries which beset him from all corners of the room. When the meeting came to a close, one man was heard to remark, "This visit with Professor Thresher was the next best thing to a trip back to Tech." During the day Professor Thresher had been taken on a tour of industrial Charleston by W. S. Brackett, R. K. Turner '23 of Carbide and Carbon, R. P. Westerhoff, and Farmer L. Current '37 of the Carnegie-Illinois Steel Corporation. The tour included some of the great chemical and munitions plants located in this part of the Kanawha Valley.

The following Alumni, in addition to those previously mentioned, were present at the dinner: Malcolm M. Anderson '42, Ernest F. Artz '42, Thomas W. Bartram '21, William Brewster '98, Northrop Brown '41, John W. Brumbaugh '41, Robert Coleman '40, John C. Collins '42, Arthur H. Crowley '35, William P. Dooley '40, Holden M. Dougherty '22, James M. Dunlap '33, Ray M. Durrett '29, Robert B. Egbert '40, Robert W. Gaines '39, Charles H. Gilmour '31, Marshall C. Guthrie, Jr., '39, Eugene W. Hanszen '42, Melville E. Hitchcock '37, Charles F. Hobson '11, Paul J. Johnson '33, Ralph L. Kelly, Jr., '42, Chifan K. Lee '41, Richard P. Little '42, Richard T. Merritt, Jr., '42, Carl S. Oldach '41, W. Vernon Osgood '36, Raoul L. Provost '43, Arthur M. Rosenblatt '09, E. Glenn Soash '36, and John E. Spalding '31.

Technology Club of Cincinnati

The Club held a luncheon on May 4 at the Gibson Hotel. We were very fortunate in having as our guest, B. Alden Thresher '20, Director of Admissions at the Institute. Professor Thresher told us of many changes and new developments at Technology and aroused a discussion so interesting that it might have lasted far into the afternoon had not Professor Thresher had to catch a train. We were also pleased to have with us Harold W. Wyatt '43, who spent some two years in the Graduate School at the Institute before going into the armed service as a private, first class. Wyatt is now at his home here in Cincinnati on a convalescent furlough after a year of service in the European theater of war. In the absence of Ken Wright '19 and Fred Morrill '07, our President and Vice-president (both of whom had been called out of town at the last minute), introductions were made by Ed Kruckemeyer '11. The attendance at this luncheon (our first in many years) was very good, 16 Alumni being present. The reaction of those men present, together with the tone of communications from such as had had previous engagements, or were to be out of town, may indicate a regular scheduled monthly luncheon here in Cincinnati.

The following members attended: W. H. Bassett, Jr., '19, W. S. Bundy '42, E. S. Coe '33, R. L. Fossett, Jr., '33, H. C. Fuller '16, C. T. Kennedy '19, F. H. Koch '32, E. H. Kruckemeyer '11, G. R. Maass '35, B. M. Markstein, Jr., '32, H. M. Nazor '32, D. J. O'Conor, Jr., '37, G. F. Schatz '30, C. R. Strong '11, J. C. Todd '23, and H. W. Wyatt '43. — George F. Schatz '30, *Secretary*, 2400 Homestead Place, Cincinnati, Ohio.

Technology Club of Hartford

We held our annual meeting and ladies' night at the Heublein Hotel in Hartford on May 24. President Tuttle '21 presided over the business meeting, during which various reports were received. George Mylchreest '10 reported that the postwar placement committee is set up and ready to function. The report of the Secretary-Treasurer was then received and accepted as read. An invitation from the New Haven County Club to join them at their outing at Pine Orchard in Branford on June 16 was read, and it was agreed that those finding it possible to accept would form a party and go down. It was also agreed that the officers should arrange our own outing for the traditional last Saturday in June, the place to be consistent with the transportation available. The next item of business was the report of the nominating committee composed of J. H. L. Giles '29, F. P. Ward '26, and Thomas D. Green '26. Officers nominated for 1945–1946 and unanimously elected were: President, Norman J. Vile '16; Vice-president, J. P. F. Pilkington '27; director for two years, F. P. Ward '26; director for one year (continuing), William S. Wise '23; nominee for Alumni Council representative, Malcolm G. Wight '06; Secretary-Treasurer, Louis Proulx, Jr., '36; class decade representatives: to 1900, E. C. Alden '95; 1900 to 1910, E. O. Hiller '04; 1910 to 1920, Harold McIntosh '19; 1920 to 1930, C. A. Morss, Jr., '21; 1930 to 1940, R. C. Molloy '33; 1940 to date, J. Campbell Brandon, Jr., '42.

After the business meeting, we had as our guest speakers Raymond Stevens '17, President of the Alumni Association, and B. E. Proctor '23 of the Department of Food Technology. Mr. Stevens brought us up to date on some of the current happenings at the Institute. He then introduced Professor Proctor, who spoke on the subject, "Food In War and Peace." Professor Proctor described the work of the Quartermaster General, with which he has been closely associated, in providing nutritious and palatable food for our fighting men in all parts of the world. He also touched on various methods of preserving food which will be of considerable postwar importance. This proved to be one of our most successful meetings. Forty-three members and guests were present, including 14 ladies. — Louis J. Proulx, Jr., '36 *Secretary*, 31 Wells Road, West Hartford 7, Conn.

Indiana Association of the M.I.T.

On May 9, we held our last meeting for the season at the Apex Grill, 129 East 16th Street. Members in attendance were the following: John H. Babbitt '17, Frank C. Balke '14, Walter W. Bonns '99, Constant L. Bouchard '36, Stanley C. Boyle '27, Joseph M. Cosgrove '22, Arthur B. Ellenwood, Jr., '34, Thomas G. Harvey '28, Lowell L. Holmes '23, Marshall D. Mc Cuen '40, Malcolm Mitchell '28, Howard S. Morse '03, George Musgrave '43, Arnold C. Rood '21, Joseph W. Stickney '96, William M. Taylor '86, and J. Lloyd Wayne, 3d, '96.

The speaker, our own C. L. Bouchard '36, II, told us of the testing of airplane engines and the fields of application of the various types of engine. Aircraft engines must operate at temperatures of 130 degrees F. to 67 degrees below zero F. and pressures of 30 inches of mercury to seven inches of mercury. This range of conditions is met in a matter of minutes. The exhaust pumps and refrigeration machines were discussed and shown in slides, as well as the arrangement of the engines with this auxiliary equipment. The altitude chamber, where engines

can be chilled for starting tests, was shown and discussed. The ingenious arrangement for solving the explosion problem was outlined. This involved the use of an explosion diaphragm and proper lid clamps. The concluding portion of the talk had to do with propeller versus jet propulsion. Propellers, which are much more efficient up to about 600 miles an hour, will therefore be used below this speed and jet propulsion for higher speeds. Further development of the reciprocating engines is likely to result in power ratings up to perhaps 8,000 horsepower. The disadvantage of these engines is their complexity. Gas turbines, because of their simplicity, offer much promise and have begun to enter the picture. It is expected that they will come into more common use, as materials to withstand high temperatures are perfected. Proposed schemes are many and varied, involving different combinations of propellers and jets with gas turbines.

Bouchard's talk was well received, and considerable discussion followed. The next regularly scheduled meeting will be held on October 10, when Howard S. Morse '03 will entertain with movies and discussion on phases of water supply. — THOMAS G. HARVEY '28, *Secretary*, Monarch Steel Company, 545 West McCarty Street, Indianapolis 7, Ind.

Technology Club of New York

The following Alumni have been admitted to membership: Lester F. Hoyt '13, research chemist, Buffalo, N.Y.; Charles Edwards '11, Pan American Airways System, New York City; Eric Etherington '20, Bear Stearns and Company, New York City; and William H. King '94, lawyer, New York City. We are happy to welcome back W. H. King, a past President, to whom the Club is indebted for the superbly bound set of the "Encyclopaedia Britannica" which graces our library. We regret to report the death on April 6 of Raymond Haskell '03. Dr. Haskell had been a member of the Club for many years.

The annual meeting was held on Tuesday evening, May 29. A buffet supper, including turkeys and hams, was served. A most interesting speaker, G. Edward Pendray, discussed "Rocket Power." Mr. Pendray is assistant to the president of the Westinghouse Electric and Manufacturing Company. Among the subjects to be covered were jet propulsion, rockets, gas turbines, and 1500-mile-per-hour planes. The nominating committee presented the following slate: for president, C. George Dandrow '22; for vice-presidents, Edwin S. Burdell '20, Raymond C. Rundlett '22, John H. Zimmerman '23, and William H. Mueser '22; for treasurer, Winfield I. McNeill '17; for assistant treasurer, W. Joseph Littlefield '17; for secretary, William W. Quarles '24; for governors serving to 1948, Saxton W. Fletcher '18, William H. Latham '26, and Harold J. Payne '22; for governors serving to 1947, Alexis R. Wiren '19, Ferris B. Briggs '22, and A. Warren Norton '21; for governors serving to 1946, Samuel H. Reynolds '22, Donald H. McNeal '23, and Anthony N. Mooradian '34.

The seventh annual golf outing and competition for the President's Cup was held on Wednesday, June 6, at the Scarsdale Golf Club, Hartsdale, N.Y. It was a great pleasure to have Dean Lobdell '17 on hand as our guest of honor. Several classes took this opportunity for informal reunion of all in the metropolitan area, whether members of the Club or not. — WILLIAM D. NEUBERG '17, *Secretary*, 24 East 39th Street, New York, N.Y. WILLIAM L. KEPLINGER, JR., '24, *Publicity Committee*, care of Johns-Manville Corporation, 22 East 40th Street, New York 16, N.Y.

Technology Club of Philadelphia

The dinner meeting on May 15 at the University Club gave Technology men good fellowship and outstanding entertainment. Ninety-one members and guests were on hand to enjoy the punch, the dinner, and our diverse and entertaining speakers, of whom more later. At about 7:45, our President, Herbert W. Anderson '15, got the meeting moving with his introduction and greetings to members and guests who were present, as well as to those other Technology men in the area whom we should like to know and entertain. We were very glad to have in our midst from Cambridge, Raymond Stevens '17, President of our Alumni Association, who gave us a short talk on the bonds between the national organization and the local clubs, ours in particular. We were mighty glad to see Raymond and hope he can be with us soon again. Andy then made special mention of men in our area who have recently distinguished themselves: Dr. Rupen Eksergian '14, of the Budd Manufacturing Company, received the Louis E. Levy Gold Medal at the Franklin Institute, on April 18. Walter C. Pew '22, former Sun Oil Company executive, was awarded the Legion of Merit, the War Department announced, for "pioneer work in large scale personnel administration." Colonel Pew, when commissioned a major in February, 1942, was general sales manager and a member of the board of directors of Sun Oil. Robert E. Worden '36, personnel manager of the Campbell Soup Company, was appointed chairman of the industrial relations committee of the Chamber of Commerce and Board of Trade. Andy introduced E. W. Baird, Jr., Treasurer of the City of Philadelphia. It developed in subsequent conversation that Mr. Baird is a great nephew of William Barton Rogers, first President and cofounder of the Institute.

As our first speaker, we were fortunate in having Henry E. Rossell '15, President of Cramp Shipbuilding and former Professor of Naval Construction at the Institute. Mr. Rossell gave us first of all a résumé of his company's war effort. Upon its rehabilitation in 1940 after 13 years of neglect and ruin, Cramp embarked on a threefold program of great difficulty, namely to rebuild the yard, train 10,000 workers, and to build Navy cruisers and submarines, which are among the most complex and specialized of all ship types. The considered opinion of many competent shipbuilders was that a new yard, such as this, was qualified only to build garbage scows; nevertheless, to date, more than two dozen ships built there, including three cruisers and six submarines, says the Navy, are equal in quality with any now operating with the Fleet. Mr. Rossell went on to give some observations on the future of the shipbuilding industry. History has shown consistent and sharp fluctuations in output; he emphasized that a total shipyard employment late in 1943 was 15 times that of early 1939. In war, the man-power and steel facilities of the nation are greatly strained to meet battle and transport requirements, whereas in peacetime only a few well-established yards can survive the poverty in demand caused by war's oversupply. Such a situation is unhealthy for the industry and for the security of a nation such as ours, the success of which on the battle fronts is written largely in ships. There are some lessons to be learned from the experience of this war. Mr. Rossell pointed out that the most successful records were made by established yards with experienced personnel, the outstanding exception being the Kaiser organization. Best results for speed and economy in shipbuilding are secured by large yards at full capacity, producing great numbers of identical ships. The conclusion from this might be that a very few such large yards would satisfy our limited peacetime needs with the greatest economy. Economy, however, is not the only consideration. The nation's interest is best served by a constant peacetime supply of high-grade as well as inexpensive ships in order to keep pace with the technological developments of other countries. Our country, then, should insure the maintenance of many small yards, in order to stimulate competition, and should see to it that these yards build about 750,000 dead-weight tons of merchant ships and the equivalent of eight to ten light cruisers annually. Our war program for building merchant and naval shipping has been marked by outstandingly intelligent leadership, which has guided the transformation of our national resources into the greatest naval and merchant fleets in world history. Mr. Rossell recommended that the people of the United States let these leaders plan for a healthy peacetime shipbuilding industry.

We were then greatly privileged to hear from our second speaker, Ralph T. Jope '28, Business Manager of The Review, who gave us the inside story of how The Review fitted into Alumni financing, of what the trends were, and what the history has been, of Alumni contribution and Review finance. In this latter category, Jope emphasized that the future success of Institute finance is dependent upon the contributions of the Alumni as a group rather than on large gifts from a limited number of philanthropists. It was gratifying to learn that over 9,000 Institute Alumni subscribe to The Review. This publication, properly supported, can be a most potent influence for constructive, co-ordinated thinking and planning. We are all familiar with the adage that collective action on programs of predetermined importance provides infinitely better results than individualized activity on haphazard ideas. Obviously, The Review, through its editorials, can do much to crystallize the problems and report the developments made both by the Institute and by the local Alumni Association.

We are all indebted to Clarence W. Farr '33 and F. Arthur Lutz '31 for their contribution to the music and singing which punctuated the meeting. The continued generosity of these members offers some hope that we shall have harmony other than the barnyard variety. Even though Bill MacCallum '24 was unable to attend

the meeting because of governmental commitments, the public address and recording systems for which he had made the necessary arrangements provided a very commendable solution to a persistent problem. Even those of us who have had a long association with Andy Anderson are constantly impressed by his infectious energy, his consistent enthusiasm, and most of all by the amazing diversities of his contacts. We feel fortunate indeed to have a president who puts himself so wholeheartedly into his work.

Technology men present at the meeting, with some 15 guests, were as follows: C. K. Allen '17, A. R. Anderson '35, H. W. Anderson '15, Mark Aronson '16, L. H. Bailey '15, E. S. Bates '24, Lloyd Bergeson '38, Harold Boericke, Jr., '44, Renshaw Borie '05, W. D. Bowman '44, O. D. Burton '18, J. E. D. Clarkson '21, J. B. Coleman '26, W. N. Currier '31, H. F. Daley '15, H. S. Dimmick '22, Rupen Eksergian '14, C. W. Farr '33, K. D. Fernstrom '10, Garland Fulton '17, E. M. Goldsmith, Jr., '23, H. F. Goldsmith '17, R. B. Goodwillie '40, Joseph Greenblatt '22, T. E. Guerin '28, R. M. Harbeck '28, Kenneth Harper '17, Greville Haslam '15, E. J. Healy '23, Karl Hellsen '32, D. C. Jackson, Jr., '21, W. R. Johnson '42, H. W. Jones '26, R. T. Jope '28, J. V. Kaufman '44, A. W. Kenney '13, H. E. Knox, Jr., '42, John Lawrence '32, C. A. Lindgren, Jr., '18, G. T. Logan '29, R. A. Lopez '44, K. S. Lord '26, F. Arthur Lutz '31, A. A. Margolin '42, S. K. McCauley '41, V. G. Miskjian '29, H. J. Mulvey '30, J. W. Patton '30, L. C. Peskin '29, E. C. Peterson '37, O. B. Pyle, Jr., '16, C. H. Ross '35, R. H. Ross '17, H. E. Rossell '15, Donald Royce '20, Sol Schneider '15, G. D. Schrader '30, R. Shaw, F. C. Simonds '36, Ray Stevens '17, C. W. Stose '22, C. W. Streed '41, R. H. Townsend '45, R. I. Ulans '36, A. G. Waggoner '42, W. H. Wannamaker '30, F. E. Washburn '26, R. W. Weeks '13, C. B. Weiler '25, E. A. Weissbach '16, E. A. Whiting '15, G. E. Whitwell '14 and R. K. Wright '13.

Remember, gentlemen, our next meeting will be on Tuesday evening, October 16. Advice to visiting Technology men: For information about the Alumni in this section, call Jefferson 0642. — EDWARDES S. PETZE '28, *Secretary*, Scott Paper Company, Foot of Market Street, Chester, Pa. *Assistant Secretaries:* Harold Boericke, Jr., '44, 5932 Overbrook Avenue, Philadelphia, Pa.; ROBERT M. HARBECK '28, Fidelity Machine Company, Philadelphia, Pa.

M.I.T. Club of Western Pennsylvania

It was a coincidence, indeed, that the annual meeting of this Club took place on May 8, which was V-E Day. The meeting place was, as usual, the University Club in Pittsburgh, where a buffet dinner preceded the program for the evening. Joseph Cox '23, President, opened the business meeting with reports from the following: S. C. Johnson '39, Secretary; G. N. Reed '23, Treasurer; R. N. Palmer '25, Secretary for membership; and H. L. Lang '09, chairman of the postwar placement committee. In addition, C. M. Boardman '25 revealed that he and Thomas Spooner '09 together with Associate Dean Pitré had interviewed 12 boys on May 7, for the purpose of awarding the regional scholarship to one boy as well as conferring competitive awards upon others present at the dinner held for this purpose. Finally, J. L. Thistle '32, chairman of the entertainment committee, announced that a picnic outing for Tech men and their wives was being planned for the month of June.

The next important topic to be discussed was the new constitution and bylaws presented by R. G. Lafean '19, chairman of the committee appointed for this task. After several of the members had conveyed their views, it was voted that the document be adopted, to become effective on July 1. In accordance with the procedure outlined therein, the following officers for the ensuing year were elected: President, T. W. Bossert '20; board of directors for one year, H. L. Bodwell '98, G. N. Reed '23, and F. W. Waterman, Jr., '25; board of directors for two years, H. W. Dexter, Jr., '23, M. L. Tressel '24, and I. W. Wilson '11; board of directors for three years, R. G. Lafean '19, J. L. Thistle '32, and R. E. Zimmerman '11.

With the business completed, members enjoyed relaxing while Paul R. Ruch of the United States Rubber Company showed interesting movies pertaining to the composition and manufacture of synthetic rubber and its contribution to the war effort. — STANLEY C. JOHNSON, '39 *Secretary*, 47-B Woodland Terrace, Clairton, Pa.

Technology Club of Rochester

"Moral law is not wrong, but it is antiquated," said Kenneth C. D. Hickman of Distillation Products, Inc., speaking before the Club on May 2. "Science Primes the Peace" is the title he has given to a provocative development of the idea that the scientific method can and must be applied to the problems of human behavior. In the development of the sciences, Dr. Hickman began, our understanding and explanations of phenomena are based upon uncontroversial facts. But scientific laws must be modified and rewritten as additional work and new methods bring forth new facts. Thus the gas laws began with the simple statements of Boyle and Charles; as more and more of the truth has become known about the behavior of gases, these statements have been modified by Van der Waals, by Beattie and Bridgeman, and others. Each statement is true, but none is the whole truth. In the same manner, he argued, re-examination of our moral truths must be continually undertaken to make sure that our moral laws also are consistent with the whole truth as we know it at that instant. Human experience is a series of revelations of more and more of the truth.

Explaining that human behavior can not only be considered scientifically, but can often be expresssd analytically, Dr. Hickman offered a definition of freedom. In his statement of the phase rule, Gibbs defined freedom thus: F=C−P+2. Hickman proposed that for human behavior the relationship — in the present state of our knowledge — be written F=(R−B) S, or Freedom=(Resources−Benefits) Skill. War, or any other move for increased *benefits*, requires reduced *freedom* unless either *resources* or *skill* can be increased. Political promises for increased *freedom* may ignore, but definite actions cannot avoid, the necessity for a simultaneous increase in *resources* or *skill*, or a decrease in *benefits*. Even this relationship must always be under scrutiny, for every statement of behavior in human affairs, as well as in science, must be examined, the factors analyzed, rephrased, and brought up consistent with our current level of knowledge.

Despite the impact of war upon us, Dr. Hickman pointed out, the world has been at peace for the greater portion of historical time, probably because (1) the growth of knowledge has been slow, not overtaking the development of the humanities, (2) there nearly always has been equity, or right according to law, and (3) belief in the "dogma" of the day, or the teachings of authority, has been complete. Hitler came upon a situation wherein countless new tools and mechanisms were available, but no comparably new standards of behavior. There was no equity; new goods were available with no known standard of value; almost nowhere was there belief in the authority or the teachings of the elders. Forgetting that the revision of truth makes the old understanding not wrong, but merely incomplete, Hitler decided that the old moral law could be completely discarded. There developed as a consequence a national pattern of life in Germany which was incompatible with ours. Scientific thinking in the field of humanities would demand that we as victors not be content with merely imposing *our* national pattern of behavior upon the Germans, but that we attempt for them and for ourselves to revise and develop our moral law so that there may be available for the world a behavior pattern based upon, and consistent with, all the truth as we know it. Necessarily such a pattern of behavior must be continually revised, but at all times it will be based upon uncontroversial facts, the tangible evidence from without ourselves which alone can be the basis for agreement between peoples.

Attending the meeting with Dr. Hickman were Grover C. Lapp, Rodger P. Loveland, and Graham C. Mees as guests of the Club. C. King Crofton '22, chairman of the regional placement committee, reported to the Club on the formation of his group to co-operate with the Alumni Association in the placement of men returning from the services. The following club members were present: Collin H. Alexander '39, Cecil Aronson '22, Kenneth T. Barkey '43, James S. Bruce '39, Henry R. Couch '20, C. King Crofton '22, Alfred Dasburg '36, Benjamin B. Dayton '36, W. Gregg Fry '35, Alexander F. Hamilton '35, Carlyle W. Jacob '36, Donald B. Kimball '20, Frederick J. Kolb, Jr., '38, Albert S. Knight, Jr., '42, Gerould T. Lane '13, Lee McCanne '27, Kenneth J. Mackenzie '28, Charles F. Payne '33, John A. Rodgers '35, Gregory Smith '30, Harold L. Smith, Jr., '39, Stanley C. Wells '30, Richard M. Wilson '30, and Clarence L. A. Wynd '27. — FREDERICK J. KOLB, JR., '38, *Secretary*, Eastman Kodak Company, Building 14, Kodak Park, Rochester 4, N.Y.

Washington Society of the M.I.T.

Those of you who were there don't need to be told — but the rest of you M.I.T. Alumni, take notice — when there are rafters, the Washington Society can make them ring to the song, "Sons of M.I.T."

That song opened Ladies' Night on the 10th of May, led by Harry Fisk and the quartet. We sure made a lot of noise. The quartet then produced a snappy number about red ration points to the tune of "The Man on the Flying Trapeze" with Larry Conant donning a butcher's outfit for a hilarious bit of drama. Joe Gaffney '28 was at the piano, and his music, new and old, put a song on everyone's lips and gave the room a mellowness that cannot be obtained in any other way. For those of you who don't remember who our quartet is, here are their names: Harry Fisk '22, tenor; Nick Stathis '29, tenor; Charlie Maskell '30, baritone; Larry Conant '21, bass.

Bill MacMahon '22 reminisced a bit and gave us all a thought or two on the year's achievements. For example, our total attendance for the year is in excess of 600, and the active membership list numbers 346. Then Bill thanked each officer of the outfit separately, giving each the conviction that the President was grateful for his particular contribution.

Proctor Dougherty '97 reported for the nominating committee in a typical Washington Society railroad manner. It was such a smooth election that the speaker, later on, jovially made some remark about no choice being offered for voting. It is the kind of election we like, because good men are nominated who are willing to serve; their qualifications are studied and discussed at length by the nominating committee; and they are presented to the Club as the best the committee could round up. As usual, we trusted the committee and elected the whole slate on a single ballot cast by the Secretary. Here is the list of new officers: W. K. MacMahon '22, President; H. H. Fisk '22, Vice-President; F. W. Milliken '04, Secretary; A. E. Beitzell '28, Treasurer; F. M. Moss '32, Assistant Treasurer; C. W. Maskell '30, Assistant Secretary; A. F. Bird '30, Review Secretary; members of the executive committee, F. W. Southworth '00, N. P. Stathis '29, T. L. Soo-Hoo '26, and Percy Thomas '00. Henry E. Worcester '96 was elected for recommendation to the Alumni Council in Cambridge. To complete the official family of the Society, the Honorary Secretaries were introduced, G. D. Mock '28, E. D. Merrill '09, and R. K. Thulman '22.

Frank Milliken read a letter from Stuart C. Godfrey '07, a brigadier general, who is now in India. The Institute's global influence was brought home to us by the General's statement that he had joined the India M.I.T. Club, which has some 400 members, largely Indians. As a musical interlude, Harry Fisk and the quartet gave us a request — they must be good to get that — selection which they first presented some two months ago, "When I Grow Too Old to Dream," with a snappy comedy relief as an encore.

Then came the treat of the evening in Dr. Joseph A. Jerger, fellow of the American Medical Association, and author of *Doctor — Here's Your Hat!* Dr. Jerger has traveled extensively in Europe and the Orient, was an intimate of Mark Twain, who was responsible for his taking up the study of medicine in this country, and is a polished speaker. In his sparkle and humor he reminded many of us of Cliff Berryman, the cartoonist. In fact, the crowd became hilarious at his first remark and didn't let down until Dr. Jerger had brought us up to date on Bedside Manners and the A.M.A. The talk really got started when Dr. Jerger began telling of his country practice with an elderly doctor in Iowa. Horse and buggy were not a symbol to him then but were the only available means of transportation on winter nights for trips of 10 miles or so with a lantern between his knees for heat. Story after story — all sidesplitting — illustrated his points, but I really think he selected the points to make an opportunity to tell the stories. Dr. Jerger grew more serious as he turned to the discussion of the function of medicine in modern society and the place held by the American Medical Association. We were left with much food for thought when we broke up the season with the Stein Song.

Present were: 1889: G. W. Stone; 1893: P. H. Thomas; 1896: M. O. Leighton; 1897: P. L. Dougherty, F. A. Hunnewell, H. M. Loomis; 1903: W. L. Cook; 1904: H. H. Groves, F. W. Milliken, G. N. Wheat: 1905: J. A. Furer, O. C. Merrill; 1909: E. D. Merrill, B. A. Robinson; 1911: C. P. Kerr, W. H. Martin, C. G. Richmond; 1912: A. M. Pedersen, R. E. Wilson; 1915: A. D. Beidelman; 1916: W. E. Wentworth, F. P. Upton; 1917: J. P. Ferrall; 1919: A. H. Blake, P. F. Swasey; 1920: John Nolen, Jr.; 1921: L. W. Conant; 1922: H. H. Fisk, W. K. MacMahon, R. K. Thulman; 1923: C. M. Bouis, S. S. Elkins; 1924: G. E. Lamb, R. P. Schreiber, W. W. Sturdy; 1925: R. Ilsley, H. E. Weihmiller; 1926: S. J. Cole; 1927: E. G. Cowen; 1928: A. E. Beitzell, J. W. Gaffney, G. D. Mock; 1929: J. A. Plugge, N. P. Stathis, F. W. Turnbull; 1930: G. L. Arnold, A. F. Bird, W. H. Martell, C. W. Maskell; 1932: W. H. Foster, S. D. Miller, F. M. Moss; 1933: C. W. Bohrer; 1935: B. D. Mills: 1936: C. E. Crede; 1937: B. E. Bennison; 1939: B. B. Langton, M. N. Goldberg; 1940: B. F. Greenberg, W. E. Hammond, R. W. McKinley; 1941: S. H. van Greenby; 1942: Z. W. Wilchinsky. — FRANK W. MILLIKEN '04, *Secretary*, 613 North Greenwich Street, Falls Church, Va. ALBERT F. BIRD '30, *Assistant and Review Secretary*, 5070 Temple Hills Road, Southeast, Washington 20, D.C.

CLASS NOTES

1885

Arthur C. Wallis, born in Beverly, Mass., on August 13, 1863, died in Worcester, on May 26. After attending the Institute, he was associated with his father, a former mayor of Beverly, in the manufacture of ladies' shoes in that city. In 1906 he became interested in the manufacture of soap powder (Hydro Palm Soap Company) in Dorchester, Mass. He continued in this concern until February, 1929, when he disposed of the business and retired. He was much interested in his Class and attended its various reunions. We last saw him two or three years ago at the time of our June luncheon. He was in poor health then and has since spent a good deal of time in hospitals. Last fall he took up his residence in the Odd Fellows Home in Worcester, where he died. He was one of the oldest members of the Bass River Lodge of Odd Fellows in Beverly.

John T. Lyman, born in Farmington, N.H., on June 9, 1862, died at his home in Upper Montclair, N.J., on April 20. He was graduated from Phillips Exeter Academy in 1881 and that fall entered Technology as a member of our Class. He took up his residence in Upper Montclair in 1893, being then engaged in the lumber business in New York. In 1905 he built a door, sash, and blind factory in Upper Montclair, which bears the name of John T. Lyman, Inc., and of which he was president until his retirement in 1927, when he turned it over to his son. Recently, as noted here in the May issue, this company was awarded the Army and Navy "E." Mr. Lyman was one of the original board of directors of the First National Bank and Trust Company of Montclair and served in that capacity for many years. He was much interested in the Class and attended the reunions held each five years, ending with the 50th in 1935 at Wellfleet — a fine man well liked by all his classmates. — ARTHUR K. HUNT, *Secretary*, Longwood Towers, Brookline 46, Mass.

1888

The Class of 1888 at Princeton, of which Holmes Forsyth is secretary, treasurer, and class agent, having 56 members compared with our 58, recently sent out 25 letters asking for contributions to their Alumni Fund and received 11 favorable responses. Are we going to allow Princeton to beat us along this line? Incidentally, I saw Princeton beat Dartmouth at baseball twice in one afternoon. And I read that Tech recently beat Harvard and Cornell at racing on the Charles River. So why don't we double our Alumni Fund contributions, as suggested by George Roper, the Norfolk shipbuilder? In his last letter he said that he had spent four and a half months in his mountain home in Pennsylvania and during that time had marked and carved a full set of dining-room chairs — two end chairs with arms and four side chairs. They were quite elaborately carved.

The Collins' left Princeton on May 9 for Chebeague Island, Maine, their summer home for 60 years. Two of their three daughters now live in Princeton, the youngest occupying the house at 76 Murray Place where President Compton lived before coming to Cambridge. Her husband, a lieutenant in the Navy, is in the South Pacific. The middle daughter, with her family of four, will spend the month of June with the rest of us on Chebeague.

We are sorry to announce the passing of Stella Thompson, wife of Sanford E. Thompson, our Assistant Secretary, on April 27 at home in Newton Highlands, where she had lived all her life. She was regent of the local chapter of the Daughters of the American Revolution and president of the Women's Association of the Newton Highlands Congregational Church. Besides her husband, she leaves two daughters, Marion and Dorothy. — BERTRAND R. T. COLLINS, *Secretary*, Chebeague Island, Maine. SANFORD E. THOMPSON, *Assistant Secretary*, The Thompson and Lichtner Company, Inc., Park Square Building, Boston 15, Mass.

1889

The Secretary's appeal for more letters from members of the Class is beginning to show results. Here are a few, and more are

wanted. From Ed Marsh, who had not been heard from for some time, comes the following: "Thanks for your good letter of March 20. So you'd like some information about what E. P. M. is up to these days. . . . I have been engaged in transmission engineering work among a few large plants in Massachusetts, Rhode Island, and Connecticut, speeding up production in plants engaged in 100 per cent defense work. It's interesting work which requires quite a little traveling. I am kept busy. Occasionally I drop in and have some pleasant calls on Zenas Bliss in Providence and Spaulding Bartlett in Webster, Mass. Both are experts in their respective lines of taxation and banking, also textile management. Some time ago, I had a pleasant chat with F. L. Hopkins in Providence and hope to see him again soon. You remember Hopkins, in 'Drill Ye Tarriers, Drill!' Frequently, in Springfield, Paul Hawkins and I have some pleasant meetings. The other day, while watching some big Thew shovels and bulldozers on a dredging job the Kelleher Company is doing here in Northampton, instantly I thought of Frank Smythe. Frank is held in high regard by Jerome Kelleher, with whom I heartily agreed.

"I am considerably amused by a young 34-year-old minister living here in Northampton who is very proud of his title Ph.D. (Physicological, not D.D.). I get quite a kick out of his attitude and have told him so. It reminds me so much of Juddy Wales's poem about Dr. Dewey back in 189–91 — 'Last term we got our Polecon with Dewey, Ph.D. He used to give us our weekly steer in Rogers 33,' and so on. My! how we do miss Juddy, along with other musical celebrities — Jimmy Cartwright, Hollis French, Larry Mauran, Billy Merrill, and others. I was very pleased you landed that high school job in Holyoke and without solicitation on your part. I congratulated one of Holyoke's industrialists and told him Holyoke was assured of a perfect job. I was sorry not to have been with you all last year at West Cedar Street, but the Fates were against me. Let's hope for better luck next time."

Arthur F. Bardwell died on March 15. Ed Marsh has sent the following: "I called on A.F.B. a few years ago. He was badly crippled and had to be wheeled about in a chair, though he seemed very bright mentally and glad to see me. He told me, among other things, that he was the inventor of the modern voting machine in general use in the country. He held several basic patents, I believe. Through the underhanded methods of some unscrupulous persons, however, he lost control of things and was cheated out of a good business. I thought this might interest you."

Will Lewis has sent the following: "Very rarely do I see any of our Class as I go in town very little. I have attended irregularly the Alumni Council meetings to keep the name of the Class to the front. There are frequent talks that have interested me, and I like to stroll about the place and see what is going on, but I contribute nothing so far as I can see. I am not much on art but a little on engineering. Some time ago I took my pictures over to the Editor of The Review. He found quite a number that might have some use. So from time to time one appears in The Review. If you saw the April number of this year, on page 356 you found a reproduction of one of them. For myself, I enjoy your parties and believe the men who can come do also. If they are not too much for you to have, I think they are worth while." — And this memo has come in from Charley Locke '96: "B. F. Wilson, III, continues in harness as director of the Parthenon in Nashville, Tenn., and incidentally doubles his salary by income from the books which he has written."

Finally, Parker Fiske has come through with the following success story, after reading which the Secretary nominates him as the classmate most likely to succeed in afterlife: "During the 1930's I was employed as a sales engineer in the oil-burning industry — a very unsatisfactory and unprofitable job as it provided only a bare living for myself and family. Seven years ago, almost to a day, I was sitting quietly one evening in my library, reading my newspaper and feeling very comfortable. Suddenly, without the slightest warning, I was struck and knocked out flat by a paralytic stroke. With the help of my son George and other members of the family, I was gotten into bed and given a sleeping potion for the night. The next day my three sons took me in an ambulance to the Phillips House of the Massachusetts General Hospital and sent for my wife, who was in Florida. She had me surrounded with the best specialists she could obtain and a flock of nurses. The specialists shook their heads and said frankly they could see no hope for my recovery. However, like the good sport she has always been in times of emergency, my wife refused to give up the fight. After about three months, they gradually brought me back to a point where I could be taken home to spend the rest of the year under the care of nurses, in gradual improvement. In January, 1939, I found myself a helpless cripple, with hardly a cent of money. My illness had practically cleaned me out.

"At that time I was able to get about the house only with considerable help. One day, while sitting in front of my fireplace, I amused myself by scattering chemicals on the burning logs, to produce a variety of beautiful colored flames. Unfortunately, the chemical lasted only a few minutes, and I was constantly compelled to get up and put on more powder, which was too difficult in my condition. This defect rendered chemical powders unsatisfactory for general use, and I set about seeing what could be done. With my daughter's help, I went to the kitchen, where we proceeded to experiment with an almost endless variety of other materials, hoping to prolong the colored flames of the powder. Nothing worked until I hit upon the idea of mixing the powder with paraffin. This immediately solved the problem. I then proceeded, with the help of some neighbors, to make up a few boxes of the new so-called 'Fiske-Colorstix.' These were distributed among my friends and neighbors, who all agreed that they were interesting and amusing, but everyone, including my own family said, 'Of course, no one would ever pay any money for them.' A few boxes were sent to a gift shop in Boston, but they pronounced them unsalable. I had vision and faith enough, however, to gamble a few dollars in a small advertisement in the fall issue of *House Beautiful*. To the astonishment of myself and everybody else, letters began to come in from all over the country with orders and checks aggregating over $1,000.

"To keep faith with the public, some action was necessary; so I got together a little help, who went to the basement, no other place being available, improvised some temporary equipment, and got out enough product to fill the orders — about 25,000 Stix, all together. These were shipped out into almost every state in the Union with full instructions for the use of the new 'Stix' and a copy of our so-called 'Deadly Parallel,' a leaflet which explained why the new product was far superior to the loose chemical powders heretofore used. As soon as the public began to use the new Stix, enthusiastic letters of approval and calls for more began to come in, and it became evident that I really had discovered something. My early shipments had evidently been passed around from hand to hand to friends, as orders began to pour in from more and more retail buyers. This public demand was soon reflected in inquiries and orders from department stores and gift shops, resulting in a measurable amount of wholesale business. I was still largely confined to my bedroom, having to lie down and rest during much of the day. During the next summer (1940), further equipment and molds were made by a local machine shop, according to my sketches, and instructions and plans for further production were perfected. In 1940, I made about 250,000 Stix and sold them for over $6,000, with a profit of about $1,500.

"Realizing that this was going to be 'some business,' I consulted all my abutters and neighbors to see whether they had any objection to what I was doing in my basement. None of them had the slightest objection and cordially signed a paper to that effect. I immediately took up the question of fire risk and installed fire extinguishers, water hose, and so on, and issued positive orders prohibiting smoking in the basement. I called in the Fire Department to make an inspection and at once put into effect all the recommendations which they made. All open flames, such as gas burners, for melting the paraffin, were discarded and electric heating kettles installed in their place. With these changes the Fire Department stated that there was practically no fire risk in connection with my operations. I have had the basement constantly under their surveillance ever since, and every recommendation which they have made has been quickly carried out. In 1941 my sales reached the $10,000 figure; in 1942, about $12,000. In 1943 'Fire Magic' had acquired such a national reputation and popularity that the public bought over 800,000 Stix and paid me about $33,000 for them. In 1944 my production was a million Stix, and my sales in Fire Magic alone, $36,000. With the new Place-Lite candles recently invented, my total sales were $50,000.

"The growth of a little idea which I evolved in 1939 has now grown to be a real business. During all this time I was confined to my house and much of the time to my bedroom. I have never been able to get out and make any personal sales, nor have I employed any salesmen or saleswomen on the road. Comparatively little advertising of Fire Magic has been done, but tons of literature and letters, as well as samples, have been poured out over the entire coun-

try, resulting in demands from individual buyers, department stores, and gift shops of every size and kind, from jobbers and distributors, importers and exporters, now totaling over 1,000 wholesale buyers, scattered over the entire United States, Canada, Alaska, Hawaii, and some foreign countries. There seems to be an insatiable public demand for more Magic Fire. It is difficult to explain this phenomenal record. Doubtless the fundamental reason is the inherent goodness of the product itself. There is nothing else remotely resembling it. Chemical powders which were largely in vogue five years ago have disappeared from the market. We have absolutely no competition of any kind. It must not be assumed, however, that Fire Magic, like 'Topsy,' has 'just growed.' Behind this record lie six years of intensive study and experimentation, not only on the product itself but upon its presentation to the public. The original conception of merely mixing paraffin with copper chloride and molding the mixture into 'Stix' has been attended with almost infinite difficulties and has required long and patient development. The original idea, however, is really the explanation of my success.

"During this long period my one aim has been to create a product which is both pleasing and serviceable to the public. This development has been engineered and carried out from my bedside. In fact, many times during the early days I rose from my bed in the middle of the night and was taken to the kitchen to experiment on the family cookstove, where the original method of molding the mixture was invented. During all this time I have been blessed with devoted and loyal assistants, who are constantly summoned from the basement to try various experiments and bring the results to my bedroom. Thus, step by step, progress has been made to the present point. This intensive study and development is still continuing, and much more will be required before final perfection is reached. Needless to say, no such development would have been possible had the work been done outside of my own house, where constant conferences and experimenting would have been utterly out of the question. The time will eventually arrive, however, when we shall entirely outgrow our present quarters, as we are now very much overcrowded in the basement. The business will then have to be entirely reorganized and moved to some suitable place. Near the end of 1943 it became evident that a much more elaborate plant would be required, and I began to design and develop a chain conveyor or 'assembly line' *à la* Ford. This was installed and put into operation by the first of June, 1944. I have never been able to go down and see the conveyor operate, but my helpers have kept me constantly informed with samples of the results, which they brought up for my criticism and improvements. The apparatus is semiautomatic and requires a comparatively small number of employees. Everyone who has seen it seems to be quite fascinated.

"Fire Magic is largely a seasonal proposition, being used only when open fireplaces are in operation. It is also largely a gift product, so that over 80 per cent of the business comes in the last half of the year. The first half is occupied with accumulating stock and getting ready for the fall business. To somewhat offset this troublesome feature, a year ago I set about developing another product, my 'Place-Lite' candle, which consists of a small candle molded in a glass candle holder, using four different colors of wax. These glass cups are tapered downward. When the candle is placed on a mirror and lighted, a very beautiful colored reflection results. I have advertised this product in one of the popular magazines. Orders have begun to pour in from all over the country, and I believe that the sales will be almost as great some day as those of Fire Magic. The ladies are particularly pleased with the candle, as it enables them to entertain, both in the dining room and around the fireplace, as described in one of my circulars, No. 194. A feature writer of the Boston *Herald* recently expressed a desire to write a special article for the Sunday *Herald* describing what he termed as 'The remarkable comeback of an elderly "Down-and-Outer" and now a successful enterpriser,' saying that it would be a matter of special interest to the public and an inspiration to others in discouraging circumstances who need an uplift. Desiring no publicity, however, I declined the offer. Only my family and a few of my most intimate friends really know very much about the story, so here it is." — WALTER H. KILHAM, *Secretary*, 126 Newbury Street, Boston 16, Mass.

1891

Charlie Ricker wrote from Havana in April that he was coming back to the States and gave his new address as Hotel Dudley, Salamanca, N.Y. He said: "As I am now preparing for my usual trip north, it is time to report to you. The past winter has not been very busy except for the old job of trying to improve my own physical condition, which is not yet satisfactory; but I still have hopes. I may find my son and his family in Washington on my way back but can't be sure because he is expecting to move in the near future and doesn't yet know exactly when or where. As I wrote you last November, the farm was sold and for cash, so I am clear of that but still have a houseful of furniture in storage in Salamanca and some other matters that need attention. Since there is a comfortable hotel where I am *persona grata*, I shall make that my temporary headquarters and have so notified all the periodicals and such that are sent to me regularly, including The Review. I may have to change again after Charles gets settled in a new place, but meantime it is the best I can do, and that country is nice in spring and early summer. I don't know what I shall do next but am hoping to go to Boston and perhaps to the White Mountains, if travel is not too difficult, and may be writing you for advice or help in finding a hotel in Boston. I am afraid to go anywhere these days without advance assurance of a place to stay; and so many hotels have been occupied by the military services."

The Boston *Herald* of May 15 tells of the death in Devon, Pa., of George Vaillant's son, who was considered an expert on Latin American affairs and a noted archaeologist. "He was chairman of the committee on cultural relations with Latin America and . . . a member of many archeological expeditions in various parts of the world. He was in charge of the Valley of Mexico excavations. He was author of many anthropological papers and since 1943 was a senior cultural relations officer with the U.S. Foreign Service Auxiliary at Lima, Peru." — The sympathy of the Class is extended to Arthur Hatch, whose wife died in Brookline last April.

Frank Howard showed his colored movies and stills of Yellowstone and Glacier national parks at a meeting of the Twentieth Century Association in Boston last April. The notice states: "These pictures were taken by Mr. Howard in August of last year, on a trip with Dr. Charles H. Tozier, research fellow in visual education for Harvard University. They were made under unusual conditions, as there were no hotels open, no busses running, and comparatively few people in the parks, a condition particularly favorable to photography. The trip started with entry to the Yellowstone Park at Gardiner, 50 miles south of Livingston, going south to Fishing Bridge; then to Old Faithful Geyser Basin. Then followed a week in Glacier Park, with two days at Waterton Lakes, returning to Bozeman."

A Brookline, Mass., paper of March 22 mentioned Gorham Dana's activities as chairman of the planning board and his nomination of William G. Perry '07, a well-known Technology Alumnus, to the Board: "Mr. Perry was educated at Harvard, . . . Technology, and the Ecole des Beaux Arts in Paris. Nationally known as the architect for the reconstruction of Williamsburg, Va., he is president of the Massachusetts Building Congress, and for several years has headed the victory garden work in Brookline. Gorham Dana, recently elected to a five year term on the planning board, is starting his 23rd year on the board and sixteenth year as chairman."

Steve Bowen and Ambrose Walker both returned from Winter Park, Fla., in April. Ambrose gives his summer address as Red Lion Inn, Stockbridge, Mass. The Secretary can report being in touch from time to time with Harry Bradlee, Harry Young, Gorham Dana, Lin Damon, Frank Howard, Will Wilder, and Clouston Moore — all, at last accounts, in good shape and active in business or with their hobbies, or otherwise. Harry Young ran across Fred Wilson, who said he was trying to find houses in Nahant to sell, without much success. Clouston Moore is on one of his frequent visits to Longwood Towers, Brookline, to see his sister, who has just returned from Winter Park, Fla. She reports Ambrose Walker as one of the social leaders of that winter colony. We have not heard from Hartley White, who bought a new winter home at Mt. Dora, Fla., a year or more ago. — HENRY A. FISKE, *Secretary*, Grinnell Company, Inc., 260 West Exchange Street, Providence, R.I.

1892

During the past month we have received notice of the death of Theodore H. Skinner on last September 3, at his home, Sherrill Road, Kenwood, N.Y. Theodore Skinner was born in Kenwood, N.Y., on September 30, 1872, the son of Joseph J. and Anna Hobart Skinner. When he was a boy, the

family moved to Boston, where he attended the public schools, and upon graduation from high school entered Technology in the fall of 1888. Four years later he was graduated with the S.B. degree in Architecture, and for nearly 16 years he practiced his profession in Boston. In 1908 he moved to Kenwood, N.Y., where he became actively engaged in designing churches, schools, residences, and other buildings. For the neighboring community of Sherrill he designed the Plymouth Congregational Church, the Senior, Kenwood Park, and Willow Place school buildings, as well as industrial plants and a number of private residences and apartment buildings. In 1925 he moved to Clearwater, Fla., and during the following 17 years designed many of the buildings in that city and vicinity. He was active in the Kiwanis Club and was president of the Little Theatre and Art Club of Clearwater, and belonged to the Boy Scout Council. In 1942 he returned to Kenwood, where he resided until the time of his death.

In 1914 he enlisted in the Corps of Engineers in the United States Army and during World War I rose to the rank of captain, being engaged as a construction engineer at Fort Dix, N.J., and at Muscle Shoals, Ala. Before World War II he had reached the rank of colonel but, having passed the age limit of 65, was on the inactive duty list. He was one of the prime movers in the organization of the Sherrill American Legion Post and the Veterans' Mountain Camp at Tupper Lake. He was a member of the Rotary Club in Oneida and belonged to the Plymouth Church in Sherrill. At the funeral services the Rev. James J. Morley, pastor of the First Presbyterian Church, Oneida, gave the eulogy, and the Sherrill Post was in charge of the commitment at the grave in the Oneida Community Cemetery. Colonel Skinner was married to Viola Craigie on February 1, 1900. Surviving him are his wife and three children, Cadet Joseph Skinner of the Officers Training School, Camp Lee, Va., Mrs. Harriet Skinner Hardwig, and Mrs. Prudence Skinner Wayland-Smith, both of Kenwood, and six grandchildren.

Notice has also been received of the death of Arthur G. Pierce on February 13 at his home in St. Johnsbury, Vt. He was born in Boston on August 9, 1870. Entering Technology in 1888, he was graduated in 1892 with the degree of S.B. in Electrical Engineering, having paid his way through by services rendered. He entered the employ of the Edison Electric Illuminating Company of Boston shortly after graduation and served with them until 1906, when he became district manager for the Cutler-Hammer Company of Milwaukee. He was engaged in the development and distribution of electric control apparatus for that company until he retired from active business over 30 years later. Leaving Boston, he served the company as district manager at Pittsburgh, Pa., and later as district manager at Cleveland, Ohio, until the time of his retirement. In 1915 he joined the Rotary Club of Pittsburgh and from then until his death gave a large amount of his time and energy to the promotion of the ideals of that organization. He was president of the Pittsburgh Club in 1934–1935. With a fellow member of the club, he prepared a classification outline for the use of the club which met with such satisfaction that he was asked to draw up a classification code for the Rotary International and was appointed by two successive presidents as chairman of the classification committee. It is stated that the code serves today as the classification basis for all Rotary Clubs the world over. He attended many Rotary International conventions in all parts of the world — the British Isles, Europe, and South America. A man of sterling character, very charitable and patriotic, he was greatly interested in the Americanization of foreign-born citizens in the city of Pittsburgh and spent a great deal of his time among these people helping them to a better understanding of American ideals. He is survived by his wife, Muriel B. Pierce, a daughter, Clara, and two sons, Richard and Robert.

At the last moment before going to press we have received notice of the death of George H. May in Lancaster, Mass., on May 25. Funeral services were conducted at his home on May 28 by the Rev. Gardiner M. Day, rector of Christ Church in Cambridge, assisted by Dr. Frederick Weis of Lancaster. Born in Newton in 1870, the son of William and Ann May, he was graduated from Technology with the S.B. degree in Chemistry. He entered the employ of the Solvay Process Company in Syracuse, N.Y., as a chemist. Later he formed the Fabrikoid Company of Newburgh, N.Y., in which he served as secretary-treasurer. In 1910 he sold the business to E. I. du Pont and retired, devoting himself thereafter to scientific agriculture in Lancaster. He had developed a process for imitating leather and another for reclaiming alcohol from a solvent, procedures which were patented all over the world. He gave the town of East Woodstock, Conn., a library in memory of his parents. Until recently he belonged to the Racquet Club, the University Club, the Country Club, and the Art Club of Philadelphia, and for many years served as treasurer and vice-president of the York, Me., Country Club. Many years ago he gave a May scholarship to the Institute for boys graduated from the Newton High School. He is survived by his widow, Mrs. Virginia P. May of Lancaster, and by a brother, William T. May of Newton Center. — CHARLES E. FULLER, *Secretary*, Box 144, Wellesley 81, Mass.

1893

Copies of the Fiftieth Anniversary Report depicting the meeting at The Country Club in Brookline on June 6, 1943, have been mailed to all members of the Class whose addresses were known. For this publication we are primarily indebted to the foresight and planning of Fred Fay. We are also appreciative of the time and careful attention which other members of the 50th reunion committee have given to the collection of material and its preparation for the printer. The book is a fine publication and a valuable contribution to the permanent history of the Class. We take great pleasure in spreading on our records the following appreciative letters.

From President Compton to Fred Dillon, Class President: "I have just had the pleasure of reading with great interest the 50th anniversary report of the Class of 1893. This is one of the nicest things of its sort which I have ever seen, and it must be a source of real pleasure to the members of the Class, as it is also a valuable historic document. To you as its president, I send greetings and my appreciation for your kindness in sending me a copy of the book. May your class have yet many years of the fine accomplishment and pleasant associations which have so distinguished it."

From Mrs. Henry A. Morss to Mr. Dillon: "I have been much interested in seeing the 50th anniversary report of the Class of 1893. . . . I have looked it all through, read a good deal of it and recognized many of the faces. It has certainly recalled many happy memories of days spent with Henry at the reunions. I always enjoyed them. I appreciate greatly having a copy of this book and wish to thank you and anyone else to whom I am indebted for remembering me."

And from Charles E Locke '96, Secretary of the Alumni Association: "I want you to know that I have received the book representing the 50th anniversary report of your Class, and I want to compliment you on its fine appearance and especially on the very informative contents which make the book so valuable. I can well understand the amount of work involved in such a publication after having finally produced for my own class a book which came out a year or two ago. I shall be grateful if you will pass my gratitude along to your class officers."

Congratulations are in order for Frederic W. Lord for having completed, in February, 50 years of active service in the successful management of the Lord Electric Company. It will be remembered that Freddie was a fast moving member of the Technology track team in our student days. He has been going strong ever since and has established an enviable reputation for his company through a practical application of the regard for fair play and a square deal innate in all true sportmen.

At the instigation of Freddie Lord and Bill Whiston, 13 men, including Charles V. Allen, Frank G. Ashton, Grosvenor T. Blood, Arthur G. Farwell, Arthur H. Jameson, Harry N. Latey, Frederic W. Lord, John I. Solomon, Frank M. Southard, Winthrop P. Tenney, Dr. Augustus B. Wadsworth, George L. Walker, and William C. Whiston, attended a luncheon at the Uptown Club in New York on May 23. One feature of this meeting was a census of grandchildren, taken at Lord's suggestion, which gave Lord six, Walker six, Allen four, Jameson three, Blood two, and Wadsworth one. Farwell, who has seven children, but as yet no grandchildren, expects soon to have a lot.

The following interesting letter of November 17 from Rigby Wason, which Solly read to the above gathering, speaks for itself as to the effect of the war on Wason's family affairs: "I was very glad to receive your letter of September 23. The censor is no doubt chiefly responsible for the delay. Much has happened to us since I last wrote you, for the government requisitioned No. 57 Onslow Gardens from us in the spring, and we had to turn out, neck and crop and in a hurry — the very devil of a job. Everything in the house had to be sorted into one of three lots: (a) to go into storage;

(b) to come down here; and (c) to be sold at auction. I sent only the family pictures into storage, as in these days of unheated warehouses it is ruination to send anything else. As for (b), I sent down here what we could hold; and then of (c) we had a grand old two days' sale. My pictures and books brought but little, but carpets and furniture commanded fair returns, and my cellar and cigars brought fantastic prices — £10 for one bottle of Benedictine! Think of it. So the upshot of the whole matter was that I got a good fat check, having had no idea I was so well off. I was sorry to part with much of it, but there was nothing else to be done about it; and I've filled the children up with War Savings Certificates, so that someday they may buy what best pleases their fancy, instead of inheriting a lot of stuff that they might, or might not, appreciate. We've three of them. My eldest, known as Rob, is now in the Royal Air Force; a daughter, Prudence, is at Cheltenham Ladies College; and Michael, in the School House at Rugby — my old house — is now nearing the sixth form and has a study, or, as we call it, 'den,' to himself. All three are doing well enough. So we've everything to be thankful for. For myself, I've resigned from the Royal Observe Corps, defeated by 'recognition,' which was all important; I simply couldn't name right away all the many new types we see here. Rob can see a speck in the sky and name it. I just can't. So, as some of our activities have been closed down, and my services were not really required, I quit before I made an ass of myself. But I did nigh on five years at it, without a miss — not so bad, as I was a long way the oldest member of the Post, and it was trying work, four hours out, night and day and in all weathers. I think Providence protected you, in making you clear out of Burma, and we've been blessed, too, in being turned out of No. 57. The change means great saving and no worries, but I should never have had pluck enough to do it without having been made to." The London address mentioned had been the home of the Wason family for generations. The new address is "Highfield," Totland Bay, Isle of Wight.

A meeting of the Class held on June 6 at 1:00 P.M. at the Engineers Club in Boston was attended by 21 men residing within 50 miles of Boston. Election of officers for the ensuing year constituted the principal item of business. The President, F. N. Dillon, together with the three vice-presidents, H. M. Latham, A. B. Edwards, and H. W. Dawes, were unanimously re-elected. Succeeding the resignation of George B. Glidden as assistant secretary-treasurer, Charles M. Spofford was elected treasurer and Frederick H. Keyes, secretary. In spite of the food shortage, we enjoyed an excellent luncheon, with Fred Dillon presiding as master of ceremonies at the head of the table. Other men present included the following: J. B. Baxter, M. B. Biscoe, L. B. Buchanan, J. S. Codman, H. N. Dawes, G. K. Dearborn, W. F. Evans, C. E. Fuller (this being his first appearance at any class meeting since graduation), G. B. Glidden, F. H. Keyes, W. F. Lamb, H. M. Latham, E. I. Leeds, Edward Page, E. S. Page, A. S. Pevear, F. D. Smith, C. M. Spofford, C. M. Taylor, and J. F. Tomfohrde. The more serious aspects of the gathering were relieved, appropriately, with cocktails, the class cheer, a few good stories, and a baritone solo by Codman, entitled "Down in Odd Fellows Hall," all of which indicated that the Class as a whole and individually still retains much of the spirit for which it was noted in the good old Nineties. It was the unanimous opinion of those present that we should hold another class meeting next year at about the same time, when it is hoped that general conditions will be improved to such an extent that a still larger attendance will be possible.

Following a long and trying illness, Mrs. Frederic H. Fay passed away on May 22. Burial took place in Marlboro, Mass., and on May 27 a memorial service was held at the First Parish Church on Meeting House Hill in Dorchester, where Mr. Fay had been an active member and chairman of the board of trustees for many years.

From Chick Kane's annual report on the Alumni Fund you have all seen that our Class made a very good showing in the 1944–1945 campaign. Your generous support of this undertaking, of such value to the Institute, is greatly appreciated. The 1945–1946 campaign is now well under way. As of May 31, 42 members of our Class had contributed $708.50, amounting to 73 per cent of our quota. With 100 living members yet to be heard from, we should be able to go over the top again this year without any difficulty. — FREDERICK H. KEYES, *Secretary*, Room 7–211, M.I.T., Cambridge 39, Mass.

1894

The Secretary has received through the Alumni office the sad news that Frederick B. Abbott, who was for two years associated with our Class, died on March 2 at his home in Bellingham, Wash. While at M.I.T., Dr. Abbott was a student in the upper years of Courses II and VI and was especially interested in manual training education. On leaving Technology, he spent several months as draftsman and designer in engineering companies in Providence and Cambridge; then for a time he taught manual training in the Eliot School in Jamaica Plain. A year of travel investigating manual training teaching in Norway, Sweden, the British Isles, Germany, Belgium, Holland, France, Switzerland, Italy, and Algiers followed. Two more years were spent in Boston schools, after which he became head of the department of manual training at the Kansas State Normal School at Emporia. He obtained a B.S. degree at Emporia College in 1900, an M.A. degree at Columbia in 1903, and a Ph.D. degree at some institution later. In recent years he had lived and taught in Bellingham. He was a man of fine personality and character. He and Mrs. Abbott had long planned to come to our 50th reunion, when a heart attack made it imperative that he should not travel. Our sincere sympathy is extended to Mrs. Abbott, and we join her in a sense of loss.

Death has also taken two more names from our list of living members. Louisa A. Wells was a special student for a very limited number of courses, and thus not well known, but she had always responded to class notices. We regret to record her decease on April 7 in Cambridge, where she lived at 318 Memorial Drive. If the Secretary's information and memory are correct, she was the daughter of Mrs. Kate Gannett Wells, who was an influential member of the State Department of Education and did much to build up the normal schools (now colleges of education) in the state and was active in public welfare and charities.

The death of Harriet Gallup de Lancey (Mrs. Darragh de Lancey) brings deep regret to the many members of the Class who knew her well in student days and in the 50 years that followed. She died peacefully in her sleep, probably in the early morning of May 16, after an illness of about three months. For the past four years, she had known that her health had been somewhat impaired, but with her generally strong vitality and compelling interest in the affairs of the day and the many associations which she cherished, she accepted the fact that her activities had limitations and courageously carried on her busy life as fully as such handicaps permitted. All who knew her well realized that she was a woman of great ability, fine personality, and strength of character. As Harriet Tooker Gallup, she entered the Institute with us in 1890 and followed the course in Chemistry. After graduation in 1894 she taught for a year in a girls' school in New York City, but her interests were broader and more technical than found expression in that environment.

Having accepted a position as chemist for the Eastman Kodak Company, she spent several weeks in the Mining Department laboratory learning the details of fire assaying in order that she might apply them in the recovery of silver residues. Her work at Rochester and her fineness of character attracted the attention of the works manager, Darragh de Lancey '90 (the first of the M.I.T. men to join the Eastman business, he supervised the construction of the first plant at Kodak Park), and in 1897 she became his wife. In passing, it may be mentioned that shortly after this event Mr. de Lancey secured Frank Lovejoy '94 as his assistant manager.

A severe nervous breakdown of two years' duration necessitated Mr. de Lancey's withdrawal from activities, but in 1900 he was able to accept an executive position in Boston, and in 1902, when he became an executive of the Stanley Instrument Company, the family moved to Great Barrington, Mass., where they resided for three years, then moving to Waterbury, where Mr. de Lancey was an executive of the Waterbury Buckle Company and became identified with the banks and many civic activities in the city. Here Mrs. de Lancey was the perfect helpmate and deeply concerned with good works. After Mr. de Lancey's retirement from exacting executive work in 1914, he still retained numerous directorships and during the war held several positions of responsibility in Washington, but they maintained their home in Waterbury, and Mrs. de Lancey was equally busy there and later abetted her husband in the study and pursuit of sculpture, in which he became highly proficient. Then followed years of travel and enjoyment of art until his illness and death in 1937. Even in a brief sketch it is impossible to separate the life story of these two devoted and remarkable individuals, whose lives were so completely intertwined and unified. Since 1937, Mrs. de Lancey had lived in their charming home in Pine

Street, Waterbury. Her son, Darragh, Jr., had been graduated at Princeton; after studying law he practiced in New York and is now a lieutenant commander in the Navy. A daughter, Margaret, married Joseph L. Hetzel '23, a very successful physician in Waterbury. Another daughter had married and lived near Boston, and another had died while a student at Smith College.

When the Class held its 45th reunion at Wianno in 1939, Mrs. de Lancey not only came herself, but insisted on the presence of the other women of the Class, and on this occasion she won the greatest admiration, not only from those of us who knew her in student days, but from all who attended the reunion. It was also with great pleasure that she was welcomed at the 50th reunion, although she could not remain for the dinner, as her son was on that day to have a short leave from his duties in the Navy. Mrs. de Lancey will always be remembered with highest respect and admiration by her classmates, and the sympathy of all goes out most sincerely to her surviving children. The Secretary is deeply indebted to Alan Claflin for sending flowers and sincere messages of condolence to Mrs. Hetzel on the occasion of the passing of this remarkable daughter of Technology.

These notes may not be brought to a close without mention of one other member from whom we have heard too little in recent years. The Secretary called on Charley Meade while in New York recently — the first meeting with him for more than 25 years. Charley is still active as a construction engineer and as the proprietor of a patented type of building material, Holobond, which he describes as the universal building brick, and one for which there should be widespread use in the building revival after the war. Call on him at his office at 1720 Grand Central Terminal Building, New York, on any Tuesday or Friday (I think those are his office days). Charley lives at Poughkeepsie with his daughter, who is a lecturer on art at Vassar and also practices landscape architecture. His son John, a Princeton graduate, is a colonel in the Army and was active in the attack on Munich just before the surrender of Germany. A day or so of leave before he went overseas came at the time of our reunion last year and so prevented Meade from being with us. We hope he will be at the 55th, and he certainly looks as if he could.

As chairman of the board of the Refrigeration Research Foundation, the Secretary was in Chicago for a meeting of the scientific advisory council from May 16 to 18 and stopped over in Rochester on the return trip for the meeting of the council of the Institute of Food Technologists and other things. While there, he telephoned Frank Lovejoy, who goes to his office as chairman of the board of the Kodak Company on alternate days but is keeping close to Rochester and his farm. It is good to know that his health is improving somewhat. A brief note came a few days ago from Horatio Parker, who is still in charge of the food and laboratory division of the health department of Jacksonville, Fla. A change of address is noted for Mrs. Frank M. Greenlaw, who has returned from Providence to 36 Bull Street, Newport. Class members will please report doings for notes in the fall issues. — Samuel C. Prescott, *Secretary*, Room 3–233, M.I.T., Cambridge 39, Mass.

1895

No news of real importance has come to the attention of your Secretary during the past month, other than the job of answering many questions about our 50th anniversary reunion held at Swampscott, at the New Ocean House, on June 23 and 24. Since details and side lights of the reunion cannot appear in The Review until the November issue, those who have not been able to attend must await that number. It is known that the following men had planned for some months to be present at the reunion: Louis Abbot, Ed Alden, Lat Ballou, Harold Barrows, Ed Barry, Sid Clapp, Gene Clapp, Fred Cutter '98, George Cutter, Andy Fuller, Perley Gilbert, George Hayden, Fred Harris, Sam Hunt, Henry Jackson, François Matthes, Charles Meserve, Allison Owen, Win Parker, George Shepard, Al Sloan, Gerry Swope, Charley Tillinghast, Ed Tucker, Willard Watkins, Tom Wiggin, and Yoder — 27 in all. When the final record is made, there may be others.

Details of our class memorial will be reported later. — Luther K. Yoder, *Secretary*, 69 Pleasant Street, Ayer, Mass.

1896

The No. 1 announcement regarding observance of our 50-year anniversary next year went out in April, and replies have come back in good number, all indicating a keen desire to meet at East Bay Lodge for our celebration if travel conditions will allow it. The idea of a significant contribution to the Alumni Fund by the Class next year is also favored practically unanimously. Responses for class dues have also come in. Anyone who has not sent in his remittance should do so. A number of bits of interesting news have come with the replies that have been received to date.

Eddie Bragg, since retiring as professor at the University of Michigan, continues to reside in Ann Arbor and has been spending his time studying propeller data and conducting a one-man crusade against the Walse-Gain theory, with the result that his biggest accomplishment to date is that of getting himself branded as a heretic by the conservative English. Lewis Cannon in Salt Lake City wants to make a trip east next year to be with us, but only cherishes the hope at the present time. He has been forced to slow down somewhat for the benefit of his heart, and one of his greatest misfortunes has been the recent obligation to give up his golf, which he loved so much. Dr. Chenery, who moved back to Los Angeles last year, says he is not at all busy, and consequently, with little to do, he finds it increasingly difficult to do the things that should be done, and he is inclined to procrastinate. He recently had a call from Fred Ashley, who, he reports, was in the best of health and when his work is slack in his architect's office, devotes his leisure time to landscape and garden architecture on his own place in Los Angeles.

Joe Clary wrote at length on the rather hectic winter which he and Mrs. Clary had in some respects. However, the five weeks which they spent in St. Petersburg in March and April were most pleasant, although a little on the warm side. They saw Irv Merrell only once, because at the time of their stay Irv and Mrs. Merrell were under the weather. He told of the purchase of a house in St. Petersburg, and at the time he wrote he and Mrs. Clary were back in Chevy Chase in the throes of packing at their former residence, which has been sold. They were sending their furniture down in May but would not go south themselves until late summer or early fall. Their address in St. Petersburg will be 250 Fourteenth Avenue, Northeast. Although they were finding it a little difficult to break away from Washington after 44 years, during which time their roots had gone pretty deep, they were nevertheless looking forward with much pleasure to life in Florida. Washington cannot be classed as a winter resort and is no place for anyone to live in comfort through the summer months. From Florida they can easily go to higher altitudes in Tennessee if they desire a cooler atmosphere.

Jim Driscoll had a surprising experience when, in attending a recent luncheon as an alumnus of Northeastern Law School, he came across Perry B. Howard. Neither one of them knew that the other was an alumnus of the school. Jack Eynon in San Diego has definite intentions of coming east to be with us next year if travel conditions will permit. He keeps himself busy playing 18 holes of golf five or six days each week and attending to the thousand and one things that one finds to do in keeping up a modest one-man home. With him, painting seems to go on pretty continuously. He has just completed laying an asphalt tiled floor in his kitchen and was working on the bathroom floor at the time he wrote. He said that he had reached the time of life when he was fulfilling the *manus*, rather than the *mens*, phase of the M.I.T. motto. Myron Fuller finally arrived back in Brockton. He and his nephew Charles left Rockport, Texas, on April 22 and drove via New Orleans, Mobile, Atlanta, the North Carolina mountains, the Natural Bridge, and the Blue Ridge skyline. This was all old territory to Myron but was new to his nephew. They visited the falls near Mount Toxaway, N.C., which is in a 40,000-acre tract once owned by Myron's father and others who had bought the tract for timber long before the railroad was built. Myron was scheduled to go to his camp in Easton in June for the summer. Classmates will be sorry to hear that George Hewins underwent a surgical job. The result was most satisfactory, however, and George reported that he was getting well back to normal. He was already in circulation and carrying on some of his work, and he was looking forward to resumption of his golf game with the coming of the month of June.

Charlie Hyde finally came through with a report on the tribute given him at the time of his retirement last year. Classmates may recall that the Secretary was able to publish an account of it through the kindness of Dean Wurster at M.I.T. Charlie says that it was a most happy occasion, and he gives the citation which was signed by 22 members of the staff, as follows: "To Charles Gilman Hyde — inspiring

teacher, renowned engineer, diligent seeker of truth, lofty of ideals, a great humanitarian loved of all, for nearly four decades, through teaching and practice you have served the University, the people of the State, and the profession with distinction and untiring devotion. On this, the occasion of your retirement from the active duties of teaching, we your co-workers in the Department of Civil Engineering in the University of California offer this testimony of our affection and esteem and of our appreciation of the happy associations of the years. Berkeley, California, June 30, 1944." Since his retirement he seems to have been busier than ever, primarily because he has been serving as a consulting sanitary engineer for the Twelfth Naval District. In that connection he has had to work on a great many problems of water supply, sewerage, and so forth, of naval stations. His regular professional work also keeps him busy, and he continues to maintain his interest in the University of California Y.M.C.A., the Boy Scouts, and the local Community and War Chest.

Eddie Mansfield makes a very attractive proposal that our 50-year contribution to the Alumni Fund might take the form of a memorial made up of $5.00 bricks, where some members of the Class might be able to build a sizeable wall and where other members could lay only a few bricks, all according to their individual financial abilities. Jim Melluish still continues on the job with the New York State Department of Health in Poughkeepsie, and Norman Rutherford says that his health keeps fairly good, although his eyesight is not so good as it was once. He seems to keep busy, however, around his home on Long Island. Spring brought Walter and Mrs. Stearns back to Schenectady in the middle of April after their sojourn in the South. Walter said that outside of a few frozen water pipes in his house and some miserable weather through April everything was all right. Joe Stickney in Indianapolis says that he is enjoying the activities of the Indiana Association of the M.I.T., which have been speeded up to a marked degree this last year. The large development of war industries in the community has brought in a considerable number of Tech men, especially younger men, and they all have interesting things to talk about, much to the enjoyment of what he terms the "older fellows."

Victor Shaw has contributed one of his characteristic newsy letters from his new address — Star Route 2, Box 71, Lake Hughes, Calif. He says: "Our anniversary celebration should be a riot of bald pates and wrinkles and clicking dentures with creaking joints well oiled, but with hearts as warm and spirits as youthful as when we used to skip blithely up that long flight of granite steps leading to the lecture rooms of the Rogers Building." He is one who is hoping to make a visit east next year to be with us, especially as he has not been east since the winter of 1922–1923. He continues busy at the same old place (only the post-office address is changed). Spring was well advanced when he wrote, after a cold and very backward start following a mild, open winter. Hardly any moisture fell during the whole month of January, and ranchers and stockmen feared short crops and poor grazing, but precipitation in the form of rain during February and March made the cattle raisers and ranchers smile again. Shaw says that outside of an occasional lamb chop he, in California, has not seen any meat for a long time, except that on the hoof. But he gets along very nicely on canned goods and plenty of good old Boston beans. He has continued his writing and has contributed for publication articles based on his visits to Greenland and Baffin Land in 1899. He was unable to make his prospecting trip into Arizona last winter because of gasoline shortage and poor tires. His interest in mining, geology, and mineralogy is still alive and kicking.

Henry Tozier and Mrs. Tozier, after spending the winter in sunny Florida, were temporarily back in Rochester in May. They were planning to spend the summer at Edgartown on Martha's Vineyard. They have never visited the island and are looking forward with much pleasure to a summer there, in what their friends tell them is a most delightful and charming place. Bradley Stoughton was flying to England the last of May for the Federal Emergency Administration and expected to be gone from Washington for about three months. A long five-page letter, in single-spaced typing, has been received from Con Young down on the Cape and is taken as good evidence that Con and Abby have emerged from their winter hibernation. Frankly, the Secretary has not had time to digest fully this contribution from Con, and a report on it will have to go over to the next issue, but it can be said that apparently the Youngs have come through the winter satisfactorily.

Colonel Billy Haseltine has sent on a report from Washington on the fifth '96 dinner, which was held as usual at the Army and Navy Club on the evening of May 16, with Joe Clary as host. In addition to Haseltine and Clary the three other members present were Leighton, Stoughton, and Hamlet. The gathering was most enjoyable, like its predecessors. Haseltine also reported on the fourth dinner, which was held on February 27, with Bradley Stoughton as host. All of this Washington crowd are making plans to attend the 50-year class reunion next year, and incidentally Haseltine remarked that Joe Clary, attired in a new midsummer suit, looked like a 20-year-old.

On May 19 the Secretary had a pleasant surprise in the form of a call from Paul Litchfield, who was in Boston to attend a 53d annual reunion of his class at the English High School. Paul brought along a copy of his new book, entitled "Autumn Leaves," which sets forth the principle of Paul's sane and sound philosophy on human relations, especially as applied to business and employment. His call was all too short to get a complete story. He had flown to Boston for the occasion. He told about his Arizona farms project and plans for production of prefabricated houses to sell at a price around $2,000. He had made trips to England last year and the year before and had seen at first hand the operation of buzz bombs and the havoc produced in London, which exceeded that of the blitz. Protection against the buzz bombs was about 75 per cent efficient in clear weather, but only about 25 per cent in foggy weather. The three antibomb devices consisted of the field of balloons outside the city, the antiaircraft guns on the coast, and the speedy airplanes which fought the bombs at the start. In the cold and foggy weather only the balloon lines were effective. Although Paul was supposed to be retired, he has continued busier than ever during the war. His Goodyear Company produced all the blimps for war purposes and has also had the job of producing hundreds of Corsair fighter planes as well as thousands of parts for other types of plane.

Admiral Bakenhus has been having some lively days in April. His office was extremely busy, and he had to be away on business in Chicago, Kingston, N.Y., and Atlantic City. His living apartment was flooded when an upstairs tenant left the water turned on. They had been in the painters' hands for a week. He had had to move his business office from the third floor to the first floor, and to top it all, he brought back from Atlantic City a very painful shoulder, so that he was in doctors' hands galore over the following week end. Bakenhus and his office secretary had been working assiduously, trying to secure further details on the death of our classmate, George McElroy, and were calling upon Gaylord Hall for further assistance. It seems that until about two years ago McElroy had been living under rather straitened circumstances at 260 West 23d Street. He had moved from there to live with a private family on West 21st Street and then went to a sanitarium, where he passed away. So far the exact date and place of his death have not been learned.

Admiral Bakenhus has contributed information on Charlie Trout to the effect that he has been re-elected as treasurer of the Metropolitan Section, American Society of Civil Engineers. This section has some 2,400 members, and Charlie has been the treasurer now for several years. Trout was also recently re-elected as treasurer of the American Society of Civil Engineers. He has held that office, too, for a long time and is also the American Society of Civil Engineers' representative on the board of the Engineering Societies' Library at 33 West 39th Street, New York.

Rockwell and Mrs. Rockwell left Cambridge on May 12 to meet a date with a fish. They reached Greenville, Maine, the next night, and did not actually move into the camp at Spencer Bay on Moosehead Lake until Monday. Fred Damon and his companion were also there, making four altogether. The fishing was good, Mrs. Rockwell scoring 15 fish and John getting a count of 19. Their trip was at the time of the May snowstorm, which amounted to five or six inches in places in Maine and caused a lot of damage to wires, especially electric transmission lines, which in turn brought big losses to the chicken raisers. Many thousands of incubator eggs went bad because of the failure of electric heat, and young chicks in great quantities perished for the same reason. The weather was not too good during their stay because of considerable cold and rain. For two days they were confined to the camp. They had a good rest, however, and Fred in particular worked hard and earned his refreshments. Incidentally, the Secretary must make a correction to get the record straight. In the November issue he said that last June John and Fred got 25 fish. He should have

stated that they each got 25 fish, or a total of 50 fish. John and Fred were planning to make another trip, which would be a stag party, to the same place, and this was scheduled for June 16 to 24.

The Secretaries regret to record the death of Ed McGonigle, who passed away in the Springfield, Mass., hospital on April 30. Ed had been working in Detroit, as reported in a recent issue, and on his doctor's advice had asked for a month's leave, so that he and Mrs. McGonigle went to Springfield to visit their daughter Betty, who was working there. Their expectation was that Ed would return in two weeks for a checkup at the Ford Hospital. His condition failed to improve, however, and he went to the Springfield Hospital for three weeks of tests. The result was a decision against surgery; so Mrs. McGonigle obtained a little furnished apartment, where they stayed until he had to go back to the hospital again. His burial was in the family lot at Hagerstown, Md.

It seems fitting that the windup of this season's notes be another of Bob Flood's stories, the subject of which is one of our fine fellows of the Class: "The next best thing to being a big fellow yourself, I find, is to sit in with big fellows. I remember once when the Alumni of M.I.T. were giving a complimentary dinner to Dr. Stratton, our new President, one of my classmates thought it would be a good thing to have a little dinner for just '96 men. So he made arrangements with the hotel and sent out 14 notices. But the time was too short, the fellows had other engagements, and only four showed up. 'It's my fault,' he said, 'I'll pay the bill.' 'Split it two ways,' said the fellow next to him. Now I had been a little late getting to that dinner. I had stopped at the office of the Piqua Hosiery Mills and sold them a darned good order of cotton yarn, and I was feeling pretty big myself. 'Split it three ways,' I said. Then the fourth man said, 'I wish you fellows would let me take care of this.' After a respectful dissension we called in the maître d'hôtel and explained the matter to him. 'We had no other engagement for this room today,' he said. 'You have eaten four dinners, and that is all you will have to pay for. The hotel would not think of taking advantage of a mistake. You are welcome here at all times, and we hope you will come again.' 'That is mighty nice treatment,' spoke up the fourth man, 'and we thank you. Maybe I can do something for this hotel. When I return home, I shall instruct the salesmen of our organization to make use of this hotel when in New York City. And', he added, 'if you will write your name on the back of my card, I will take pleasure in calling your management's attention to the fine way you have treated us!' The card: 'Goodyear Tire & Rubber Company, Akron, Ohio, Paul W. Litchfield.' Paul was production manager at the time, later vice-president, then president, and then chairman of the board. Lord knows what he is now. I wish I could recall the names of the other two fellows. One, I remember, put in the metal front of the hotel we were in, including the revolving doors." — CHARLES E LOCKE, *Secretary*, Room 8-109, M.I.T., Cambridge 39, Mass. JOHN A. ROCKWELL, *Assistant Secretary*, 24 Garden Street, Cambridge 38, Mass.

1897

We have learned that Mary Baker Strong, VII and XII, of Cambridge, Mass., died on October 13.

Charles H. Eames, VI, who has been president of the Lowell Textile School, Lowell, Mass., for the past 41 years, retired at the end of the school year in June. While this institution has been under his direction, its growth has been enormous, and its service to the textile industry has been very great. Its graduates are to be found holding high executive positions in textile and other plants and a tremendous amount of research work has been carried on in the school's laboratories. We all congratulate Charlie on the success of his lifework and wish him many years of good health, rest, and enjoyment.

E. Percy Brown '97, III, has stuck to his native country of Nova Scotia ever since his graduation. Since gold mining in Nova Scotia has not been a particularly flourishing industry, for the past 30 years Brown has been engaged in raising apples and chickens at "Highlands," Wolfville, N.S. He has to admit that it is a healthy life and that his four children have doubtless grown up in better surroundings than would have been the case if he had continued to follow mining. He was a Scoutmaster for 25 years. — JOHN A. COLLINS, JR., *Secretary*, 20 Quincy Street, Lawrence, Mass.

1898

Van Rensselaer Lansingh, although he was graduated in Electrical Engineering, has been for the last 25 years in the business of mining and refining nonferrous ores. From 1920 to 1930 he was president of the York Metal and Alloys Company of York, Pa. In 1930 that company merged with the Molybdenum Corporation of America, and since then he has been vice-president of the company with special reference to the mining and purchase of tungsten, molybdenum, and vanadium concentrates. Since the war started, he has also looked after the company's business in Washington, especially with reference to priorities, allocations, and so forth. All of the company's output goes directly or indirectly into war work. For this purpose the company maintains an apartment in Washington at the Lee Sheraton Hotel. His office in New York is at 500 Fifth Avenue. He is a member of the Washington Society of the M.I.T., the Engineers Club in New York, and the California Club in Los Angeles. He has a summer home on the ocean at Deer Isle, Maine, where he manages to stay for a month to six weeks each year. In New York he has an apartment at 1120 Fifth Avenue.

The Sunday issues of the Pasadena *Post* of December 10 and January 7 have special articles and pictures describing Paul Johnson's estate in Altadena. One picture shows Paul inspecting one of his 25-year-old cork oak trees which bears about 200 pounds of cork. This tree is a specimen that has been studied closely for the past 10 years by the University of California agriculturists and by cork experts. Paul is now planting 160 cork oak seedlings for experimental purposes for the county. These new trees will be ready for their first harvest in from 10 to 15 years. Paul's son Seymour has, as already reported, been one of the important men in the radiation research going on at M.I.T. but has now returned home to California. Paul has three grandsons either in training or in actual service in the armed forces.

A letter from Dan Edgerly written on December 12 said he had been in Boston and seen George Cottle and Ed Chapin. He was shortly starting for Mexico and regretted that he would not meet John Goddard any more, recalling several times in the past when he had seen him in Mexico and in different parts of this country.

Edgar Weimer wrote last December for the addresses of the Class with the intention of sending out his usual New Year greetings to his classmates. The delay in forwarding his letter prevented getting the addresses to him in time to be of use. We do appreciate his intention and also his performance in earlier years. He said he had been working 16 hours a day six days a week on Victory Ship work until the plant burned down. In consideration of his 70 years he felt he must slow down a bit. He reported that his plans for flood prevention and coal dust conservation were being taken up and put in operation in Pennsylvania. We note his change of address to 2029 North Second Street, Harrisburg, Pa.

Charley Winslow will retire at the end of this academic year from his position as chairman of the department of public health at Yale University. We clipped the following from the Hartford *Times* of March 2: "Professor Winslow, who is internationally known for his work in public health, retires after 30 years of service on the Yale faculty as Anna M. R. Lauder professor of public health. He was trained under W. T. Sedgwick (Yale '77S) at . . . Technology and taught there for 12 years. He later received the honorary degree of Doctor of Public Health from New York University. While in New York, Professor Winslow served as chairman of the New York State Commission on Ventilation, and since coming to New Haven he has been director of the John B. Pierce Laboratory of Hygiene, which has made fundamental contributions to the physiology of air-conditioning and is devoting its resources during the war to studies on the protection of army personnel against extreme heat and cold. He is now serving as president of the American Society of Heating and Ventilating Engineers. In 1940 he was the recipient of the 'New Haven Labor Award' for his public service to New Haven, and has been chairman of the New Haven Housing Authority since its inception."

We have to report the following deaths: Frederic Furbish of New York City on June 4, 1944, Eleanor W. Daggett of Boston on September 24, Mary J. Thomson of East Stroudsburg, Pa., on October 21, Albert R. Shedd of Washington, D. C., on November 5, and James R. Guy of Norfolk, Va., on December 4. Mary Jane Thomson was a distant cousin of General MacArthur. She taught for many years in the Dwight School for Girls in Englewood, N.J. Albert Shedd was a loyal alumnus and was present at many of our class reunions. The following is from the Washington, D.C., *Star* of November 5: "Albert Rix Shedd, Navy Department consulting engineer for 28

years, died . . . at Garfield Hospital after a short illness [burial in Rock Creek Cemetery]. He lived at 1849 Monroe Street, N.W. The son of William Parker Shedd and Helen Spaulding Shedd, he was born in Silver Creek, N.Y. After graduation from . . . Technology, he was employed in engineering capacities in Chicago and Hingham, Mass. He entered the Navy Department in 1916 and was retired last June. He is survived by his widow, Mrs. Katie Griffith Shedd, and a daughter, Miss Lovira Helen Shedd." — ARTHUR A. BLANCHARD, *Secretary*, Room 6-421, M.I.T., Cambridge 39, Mass.

1899

Clarence B. Cluff passed away suddenly on January 24 from coronary thrombosis. He is survived by his wife, Laura Ellen Risley Cluff, and a sister, Mrs. Arthur B. Walker of Haverhill, Mass. An only son, Daniel, preceded him in death in 1926. Born in Haverhill, Mass., he was the son of Milton O., and Elizabeth Wardman, Cluff. Clarence had been active in the oil and soap industry from the time of his graduation from Technology in Course V. Until 1913 he was associated with the American Cotton Oil Company, and for the following two years he occupied the position of chief chemist with the N. K. Fairbank Company. He then returned to the American Cotton Oil Company as superintendent of refining and later became manager of the manufacturing department. Since 1923 he had been associated with the Procter and Gamble Company, first as member of the chemical division and later as head of the patent department.

During Clarence Cluff's association with the vegetable oil industry, he rendered a particularly valuable service in contributing to the standardization of laboratory techniques and procedures used in the evaluation of vegetable oils. He was a member of the National Cottonseed Products Association, of the American Oil Chemists' Society, of the American Chemical Society, and formerly was a member of the American Institute of Chemical Engineers. In the first of these societies he served on the chemists' committee continuously for 29 years, and in the American Oil Chemists' Society he served as president of the refining committee for several years. In all these various forms of service, Clarence enjoyed the enviable reputation of rendering advice and suggestions free from bias and partisanship. Never did he permit his personal or company's interest to influence his opinions. He will be long remembered for his helpfulness to his business associates and other friends, and notably for his fairness and straightforwardness in all dealings with his fellow men.

Laurence A. Hawkins, research engineer for the General Electric Company at Schenectady for 33 years, retired from that post on March 31, but continues as consultant to the General Electric research laboratories. Laurence is a native of Pittsfield, Mass. He received a degree of B.A. from Williams College in 1897 and then joined Course VI at M.I.T. On graduation, he went to work for the Stanley Electric Company of Pittsfield in the engineering and patent department. After three years with that concern he transferred to the patent department of the General Electric Company and has been connected with that company ever since. In 1910 he was transferred to the railway signal division and in 1912 to the research laboratory, first as executive assistant and later as executive engineer. As part of his duties as executive engineer, he has acted as business manager of the research laboratory and co-ordinator of the various research activities of the several hundred scientists connected with the laboratory. Laurence is a life member of the American Institute of Electrical Engineers, a past director of the Illuminating Engineering Society, and a trustee of their research fund. He is also a member of the American Association for the Advancement of Science and has been the author of many papers on industrial research. — BURT R. RICKARDS, *Secretary*, 381 State Street, Albany, N.Y. ARTHUR H. BROWN, *Assistant Secretary*, 53 State Street, Boston 9, Mass.

1900

Herewith are some of the replies received from those too far away to attempt a trip for the June reunion. Walter Rapp in Cincinnati writes: "I received your notice of the 45th reunion to be held at East Bay Lodge in June. Mrs. Rapp and I hope to go East for a few weeks this summer, but I am sorry that we shall not be able to arrange the time this year to tie in with the reunion dates. I often think of you lucky guys who live in or near Boston or New York and are able to jump off for your vacations on short notice and can join your families for week ends at nearby shore places. It is just too bad that Cincinnati is located too far inland to enable us to do this. I wish you and the committee all success in getting together a large number of the Class for the reunion, with my best regards to all members who attend the meeting."

Tom Perry writes: "What an antiquated bunch we are getting to be! With four grandsons, however, and two of the boys (son and son-in-law) in the armed services, our house and hearts are full of keeping the home fires burning and doing the oldsters' part in helping to keep the families hale and hearty. So getting away would be difficult in any case and without the benefit of gas it will be worse yet. So don't count on the Perrys. If circumstances should make it possible to come, I will let you know, and I'll try to write a letter with family news in time for the meeting."

Harry Grant has the following to say: "I am not going to decide about the 45th reunion until the time for it arrives. I should like very much to come but may be prevented by rapidly changing conditions here in Washington. Marcy Sperry does not feel that he can get away, and I can thoroughly understand his uneasiness. I haven't seen Harry Morris lately, but will see him and find out whether he can attend. I enjoyed our 40th reunion very much and promised myself I would not miss the five-year intervals hereafter. This, however, is an unusual year, and I shall have to withhold final decision until we see how things are breaking. I am pleased to hear from your note of April 14 that you are getting gratifying response for this year."

Regretfully we heard from Fred Everett: "Since writing you last month that it was my intention to attend the 45th reunion of the Class in June, I have received a notice that the executive committee of the American Association of State Highway Officials is holding its semiannual meeting on June 21, 22, and 23 in Washington, D.C. This committee is made up of 12 of us highway officials, and it is quite necessary that we attend the meetings. I was in the hospital last March when the quarterly meeting was held and so was unable to attend. I feel it is my duty, therefore, to go to Washington this time as there are important matters coming up for our attention. I regret very much not being able to attend the reunion of the Class as I had planned for some time to do so. I should appreciate it if you would extend my best regards to the boys who remember me, and I do hope you have a most enjoyable get-together."

Arthur Constantine, long away from our midst, takes time from his arduous duties as news correspondent in Mexico City to write us a long letter, a part of which follows: "I beg to report that I weigh, with clothes, 165 pounds and have used the same belt hole for 25 years. I still swim the crawl; but, these days, I merely play 'pass' with my three-year-old grandson. I wish I could make the reunion at Osterville. If I can, I'll be there. I wonder if I'd recognize many classmates whom I haven't seen since I left Tech. If I don't get to Osterville, please remember me to Joe Draper, Stanley Sears, and Brackley Shaw. There's a young Arthur fighting in Germany. And before he got there, he had made four parachute missions to France (including Cherbourg) and Belgium. He went into the war from the University of Texas, where he was a promising middle distance runner. (He could do the quarter in 49 3–5, the half in 1.59 and the mile in 4.27.) He was also a crack swimmer. I have a daughter on the other side, too, in England. She is married to a commander of the British Navy. She has a daughter who was born in England. My daughter Laura is the mother of two boys. I hope that one of them will go to M.I.T. It was great to hear from you." — C. BURTON COTTING, *Secretary*, 111 Devonshire Street, Boston 9, Mass.

1901

I talked with Harry Chalmers recently at the Technology Club of New York. He is a regular there and is often playing Contract, as is Asher Weil, but this time he was free to talk to me. He says that he is really a 1900½ man as his work at M.I.T. was finished in October, but was not passed upon by the Faculty in time for his degree to be dated 1900. It was dated about March, 1901 — not a bad situation for Harry, as in this way he can be invited to the doings of both classes. In the latter part of 1900 he was endeavoring to start a business in paint removers with Carleton Ellis and in March, 1901, became the active member of a partnership now known as the Chalmers Chemical Company, an outgrowth of which in 1905 was the Chadeloid Chemical Company, a patent holding company. Both are still in business, but he sold the first, and most of the second, and has been working on new inventions except in the two war periods. During the last war he was employed by the California Loading Company in New Jersey at the request of Major Frank B. Gilbreth to carry out his plans for

speeding up the production on loading fuses, boosters, bouchons, and hand grenades. Recently he has been resident inspector of ordnance and explosives at Verona, N.J., in connection with the manufacture of magnesium powder. He has three sons. One is chief of censorship for the Treasury Department in Balboa, Canal Zone, and his youngest, H.B.C., Jr., is a lieutenant.

Charles E Locke '96, Alumni Secretary, sent me the following memorandum: "Albert P. Gonzales of the Class of 1901 has followed the profession of mining in Mexico ever since his graduation and says he is still on the firing line, making his headquarters in Monterrey, Mexico. He is proud of his success in private life, too, as the father of four boys and four girls and the grandfather of three little boys." Professor Locke '96 also gives the information that Theodore F. Lange, who has been vice-president of the Technology Club of the Connecticut Valley, became acting president when Otto Kohler moved to Boston. — Only recently have I learned that Harold Wesson is president of Smith and Wesson, revolver manufacturers of Springfield, Mass. Our records have for some time shown his home address as Glen Arden, Longmeadow, Mass. But I had not known of his connection with Smith and Wesson.

John Anderson, who is manufacturing engineer (mechanical) with Commercial Controls Corporation in Rochester, N.Y., producing carbines, Springfield parts, and bomb and motor fuses, writes: "I shall retire as soon as this war is finished — if I last that long." — Ellis Lawrence says: "After our cantonment and housing jobs, we are busy with postwar projects including 2½ million dollars' worth of buildings for the University of Oregon and its medical school. I am chairman of the committee on northwest development of the Oregon Building Congress. I have four grandchildren now and am still collecting agates." — A note from Edmond Brigham (retired) says: "Thanks for the class news, but I am sorry to learn of the many deaths. I have especially missed Allan W. Rowe, who died some years ago. He was a coursemate of mine, and I used to see him occasionally. I have four children and four grandchildren. One boy, a lieutenant, is a navigator in the Air Forces. One boy, also a lieutenant, is in Army Intelligence. On October 19 I married my second wife, Sybil Lang of Boston." — Phil Moore sent in the back page of a special issue of the Winter Park, Fla., paper celebrating the 60th anniversary of Rollins College. The whole page was used to set off an open letter to the President, Dr. Holt, by Al Higgins, President of the Florida Power Corporation. Al, as Phil expressed it, "did himself proud" with an excellent letter, but space does not permit the inclusion of it here.

Willard Dow is now a certified public accountant in practice in Boston as principal. He writes: "I understand that Bob Williams has a submarine signal for fishing purposes. He can now pick out a wall-eyed pike from the normal variety at a depth of 40 feet. I shall be glad to take on any one of the 1901 visiting firemen at squash rackets — stakes to be arranged." — Roger Wight says: "Not long ago I heard from our classmate Joe Evans in Omaha, Neb., and was fortunately able to make arrangements to secure for him the wherewithal for giving a clam chowder dinner to a large party of his friends in Omaha. Joe has written me that the dinner went off with a bang; so I judge the clam chowder must have been appreciated. Joe, as you know, was always fond of sea food, and you may be sure that both he and I are already looking forward to our 45th anniversary, when Joe should have an opportunity to secure all the sea food he wants, at the same place as on our 40th reunion." — Emma Ferris writes in part: "Please make the following corrections. First, revise 'Mrs.' to 'Miss' and, second, change my address from 12 Billings Park, Newton, to 39 Central Avenue, Newtonville 60, Mass. I sold my nine-room home in the fall and had to move in a hurry. I am merely existing until I can find a house I want back in Newton. I have been doing secretarial work three days a week for my physician and canteen work twice a month at the Red Cross chapter house."

Al Casani is assistant to the president of the American Bridge Company, Frick Building, Pittsburgh 19, Pa. — Frank Emerson writes: "I am inactive at present, merely holding a small office in which the junior partners, a lieutenant colonel in the Air Forces and others, may re-establish practice after the war. Herbert E. Hewitt '94, senior partner of the firm, a graduate of M.I.T. in Architecture, died in October, 1944." — Paul Hilken gives his occupation as "farmer, at present growing small fruits, principally grapes and berries, but [he says] the trees will be bearing before long . . . apples, pears, peaches, and quince." He adds, "I am almost 67 and still going strong, cutting down trees, sawing and splitting logs, and when the weather permits, building stone walls — in short, doing all the chores needed in the care of 22 acres. I am working harder and having more pleasure than ever before." — Ralph Stearns reports: "Our two daughters are still in college. We have no sons." — Anthony Peters writes: "There's no letup in work here; in fact the Army (Engineers in Boston) is getting tougher on us civilians, so that there is no telling when we shall get back on thermoplastics again." Robert R. M. Carpenter, Vice-president and director of the Du Pont Company, says he is giving practically all his time for the duration as chairman of the Delaware chapter of the American Red Cross. — Bob Derby is with the Reconstruction Finance Corporation at 70 Pine Street, New York City.

Ed Beckwith writes: "I am at present the only civilian navigation instructor here at the Naval Air Base in Pensacola, Fla. There are certain advantages in a civilian rating: I do the same job as the naval officers but am not subject to naval discipline. Pilots and navigators, or prospective pilots and navigators, receive instruction in the latest methods of air navigation and its practical application through flights in sea and land planes. There is also work with the Link Celestial Trainer, an instrument which simulates conditions of actual flight. The course is intensive and completed in minimum time. A small proportion of British and French have received instruction here. For the past year I have done no teaching, but make up the examinations and problems in navigation subjects which the men must pass before they enter active service."

Ralph Robinson writes: "I have just retired from the General Electric Company. I intend to keep my home in Schenectady, N.Y., but travel or go south winters. I hope to get in a lot of golf this summer, but my victory garden keeps me pretty busy. I am honorary secretary for the Institute and chairman of the local scholarship committees. This work is very interesting and especially gratifying as only the very best boys apply for entrance to Technology."

A clipping from the Schenectady *Gazette* gives some interesting facts about Ralph's career. It reads as follows: "Retirement of R. C. Robinson as manufacturing engineer of the General Electric Co. electronics department's tube division was announced at a testimonial dinner in his honor at the Mohawk Golf club last night. Mr. Robinson has been employed by the company for 43 years, almost 30 of which were spent in the manufacture of electronic tubes. At the dinner he was presented with a collection of gifts by members of the division. In 1917 he was given four small buildings on which to make Dr. Coolidge's X-ray tube for the armed forces. Six hundred tubes a week was the schedule. Today, Mr. Robinson, a pioneer in the vacuum tube business, is leaving the department where as many as 20,000 tubes a week of one type are manufactured. Mr. Robinson's early work with the company was on lamps. He took an active part in the development of the new efficient ductile tungsten lamp.

"After Dr. Coolidge completed his early development of the X-ray tube, Mr. Robinson was chosen to head a new department to enter into the manufacture of these tubes. Manufacturing engineer has been his title ever since, first of this department and then, in 1941, in the newly-formed electronics department. Mr. Robinson was thus engaged in the making of tubes before their numerous communication uses were developed. Sometime later when the research laboratory had developed the beginnings of radio tubes and their application was foreseen, it was natural to look to Mr. Robinson's organization to take on their manufacture also. Under his supervision, the tube business grew steadily and a new plant was required. Through the years, Mr. Robinson has kept a signature book of the people who came to Schenectady to study the General Electric tube methods and applications. Some of the names in the book are world renowned. Listed among others are: J. J. Thomson, famed English physicist; Henri Pilon, French X-ray authority; Niles Bohr, University of Copenhagen. Mr. Robinson's philosophy of management is best indicated by the framed placard that hung in his office for many years: 'I would rather make men than money.' " GUY C. PETERSON, *Secretary*, 788 Riverside Drive, New York 32, N.Y. THEODORE H. TAFT, *Assistant Secretary*, Room 3-266, M.I.T., Cambridge 39, Mass.

1903

Several months ago we wrote a special appeal to the retired members of the Class to put a part of their time into looking up

others of the Class and writing us information to be used in these notes. We have had one reply which, strangely enough, takes us to task for expecting a retired man to do this work, stating that the only ones who have time to do it are the busy men. Gib Gleason writes from his retirement at North Edgecomb, Maine, that a retired man doesn't have leisure for any extra-curricular work. And then he enumerates the various things he does — cutting firewood, plowing, raising fruits and vegetables, even building a punt to be used on a pond or river and named *Sixty Yards* because "that's a good punt in any man's game." It was an entertaining letter — would that others might do likewise and write the Secretaries.

E. W. Pelton, II, for 40 years with the Stanley Works at New Britain, Conn., joined the retired ranks in March, after rising from cost clerk to vice-president and general superintendent. Congratulations and long life and health to him. C. S. Aldrich, II, after running his own company (Gray Aldrich Marine Corporation) for 40 years, through good times and bad, decided last January that he should let somebody else run it, so sold out to J. H. Westerbeke Corporation. Chester remains with the new firm in an advisory capacity as vice-president, and we hope he too will have many years ahead. Once more after a protracted silence George H. Clark, VI, has made himself heard. In a long and interesting letter to Professor Locke '96 he tells about the early days of wireless telegraphy and the part he had in it, as "the first college man to prepare in college for a career in wireless telegraphy." He worked for John Stone Stone for six years, "and during World War I had a lot to say about the Navy's radio." After 11 years of this he joined the Radio Corporation of America and expects to be with them for some time to come. Meanwhile he is "writing biography and history of old time radio men and things," his present subject being John Stone Stone.

The rest of our notes are not so happy, since we must report the deaths of Maurice A. Fogg, VI, in December, Benjamin Nields, III, in February, Milton J. Firey, IV, in March, and Raymond Haskell, VIII, in April. Only a brief notice resulting from the Alumni Fund appeal was received in the cases of Fogg and Nields. A newspaper clipping stated that Firey was vice-president of the Maryland Hotel Association and owner and manager of the Congress Hotel, dying in Baltimore, Md., on March 20. Further information in regard to the others would be appreciated and recorded. Haskell was consulting engineer for the Texas oil company, was a native of Baltimore, and died in New York City on April 6. He took degrees of B.S., M.S., and Ph.D. at the Institute, and also a chemical engineering degree at Clarkson College. He started as an instructor at the Institute in 1907–1908, then became a scientific assistant in the Lighthouse Service. From 1908 to 1918, he rose to be superintendent, in the latter year joining the Navy as a civilian scientist. In 1919 he joined the Texas Company. While in the Navy he was particularly interested in the improvement of secret signaling devices. In late years Haskell has attended reunions of the Class, the last one being our 40th at New London in 1943. Many of us were glad to become better acquainted with him. FREDERICK A. EUSTIS, *Secretary*, 131 State Street, Boston 9, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, 441 Stuart Street, Boston 16, Mass.

1905

If you failed to peruse the Fifth Annual Report of the M.I.T. Alumni Fund, you missed reading: "The Class of 1905 broke all records with a figure of 346 per cent of quota in amount. The 50-year class, 1894, made an all-out effort and achieved the remarkable showing of 260 per cent. With the exception of 1905, no other class had ever before neared this figure." So, the best Class of all has done it again, thanks to the superb efforts of Class Agent Grafton B. Perkins, V — that is, Perk and his right-hand man, Jackson O'Connell, I.P. In percentage of contributors, however, we ran only 98 per cent with 13 classes ahead of us. That means that about 60 more '05 men should send in their contributions in appreciation of Perk's efforts.

I wish I could copy here an article from the Newton, Mass., *Graphic* of a few weeks ago quoting a letter from Major Nathan H. Wentworth (Harry's son), which tells of his recent work in Germany, serving with the Intelligence Division. In its intimate and personal reflections it is much more interesting than the stories of the professional war correspondents. Harry fears he may have to pass up the 40th reunion as both his boys, Nathan and Gordon, may be at home in the middle of June. The latter, now a major, has been in the service four and a half years.

It is with deep sorrow that I have to report the passing of Frederick G. Bennett on May 4. Fred had signed up on the preliminary questionnaire for the 40th reunion and was planning to attend with Mrs. Bennett. A clipping from a local paper says: "Frederick Gardiner Bennett, 61, a resident of Far Rockaway for many years, during which time he took a very active part in the Boy Scout movement, died at his home, 1040 Brunswick Ave., Far Rockaway, . . . following a lingering illness of heart ailment. Mr. Bennett was born in Southampton, L.I., the son of Edward and Ella Bennett. He was a graduate of . . . Technology and was a civil engineer who during his career had been affiliated with the New York City Aqueduct engineering staff, the firm of Hill and Ferguson and Sidney B. Browne, civil engineer of Mineola and Glen Cove. Mr. Bennett retired from active business in 1941 when he was taken ill. He was active in the Boy Scout movement for 19 years, being chairman of the Troop Organization Committee of the Rockaways, chairman of the District Court of Honor, and chairman of the Troop Committee of Troop 25, affiliated with the First Presbyterian Church of Far Rockaway. He was a member of the Old Town Masonic Lodge of Southampton and trustee of the First Presbyterian Church of Far Rockaway at the time of his death. Mr. Bennett is survived by his wife, Grace Kellogg Bennett, a step-daughter, Mrs. Alice Breiner of Greenville, N.Y., and two sisters, Mrs. Ethel Howell of New Rochelle and Mrs. Sadie Blower of Southampton, L.I."

We have also the very brief announcement of the death of Richard V. Collins, I, at Albany, N.Y., on October 24. Dick had been with the State Highway Division of the State of New York for many years. FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston 10, Mass. SIDNEY T. STRICKLAND, *Assistant Secretary*, 71 Newbury Street, Boston 16, Mass.

1907

Some months ago in these notes I mentioned the number of additional contributors and of additional dollars that should come from our Class to the M.I.T. Alumni Fund in order that we might attain our quotas in both respects for the year 1944–1945. Whether my comments had anything to do with the result I know not, but at any rate the final record for the year shows 1907 with 116 contributors, which is 101 per cent of quota, and with $2,804.50, which is 106 per cent of quota. This report is pleasing to us all. Now the campaign for the 1945–1946 year is well under way. Let us give promptly and generously. Charlie Allen is our class agent. Let us support him in his efforts to secure from the Class a larger amount of money from a greater number of men than ever before.

The May 28 number of *Life* presents a so-called "Portfolio of Ideas for Home Planning." Our Sam Marx, with two associates, is credited with the plans for the "indoor-outdoor living room."

Now I have news to report with reference to only one other classmate, but I believe this will be a treat to you as it was to me when, on May 2, I received from Byron P. Luce, II, the kind of a message that I have been writing for and hoping for during the past 25 years. His letter was dated April 19 and written on the letter head of Ingenio Manuelita, S.A., Palmira-Valle, Republica de Colombia. I quote: "I thank you for your patience in endeavoring periodically to contact me. . . . Since stepping forth in 1907 with diploma in hand, I have virtually devoted my time to the sugar-cane industry. This has resulted in my living in tropical countries, with sojourns in the Louisianan and Florida sugar producing areas. . . . I have been no Halley's comet with a path of light across the sky, yet in the sugar crowd Luce's name is known from executives' desks in Broadway and Wall Street offices, through the West Indies, to the barefoot peon bull drivers in the hinterlands of Colombia. Activity, health, hope, gracious living, friends of all categories, some doubloons cached, and the stimulating anticipation of viewing the valley on the other side of the 'cordillera,' is in brief my record to date. . . . The term of typical tropical tramp may be applied to me appropriately, yet I am not hypnotized by the appellation for I do not subscribe to the whole creed of this coterie. The future, as they say, 'es en las manos de Dios.'

"Mrs. Luce and I are headed for Martha's Vineyard, Mass., on May 2 from Cali via New Orleans. After a bit of rest, if it is apparent that I can help out in re-establishing the sugar industry in the Philippines, then I am ready to take off my coat and pitch in, as against returning to Colombia, for at least I have kept my talents bright in service, even at times to the giving up of what appeared to be lucrative, established positions with assured sedentary living

. . . Bryant, I am no crusader, but life is stimulating activity. Home is a state of consciousness. And my object in life is to bring harmony out of chaos. These ideas may be a bit altruistic, yet in the concrete, I have been instrumental in establishing new sugar properties where formerly none existed and have helped in creating jobs for thousands and better standards of living for many; I have revamped a number of junk outfits into producers. . . . Perhaps the temperamental setup is like that of the Coast Guard service — the stimulation of rescue activity followed by the letdown and irksomeness of routine patrol. So has it been with me. Once a property is clicking on all six, purring like a contented cat, Luce gets restless. With my grandfather, a whaling captain, a time would come, after he had been at home a while after a voyage, when he would 'pace the quarter-deck,' and as mother used to tell me, this symptom inevitably meant his signing up for another trip. So with me, during breathing spells, I sniff the breeze for future real activity. . . . Since shoving off on this cruise of life, I have had little contact with Tech men except that here in Palmira, A. E. Calero '31 and Harold H. Eder '23 are graduates of M.I.T."

Byron gives his present business as the administration of Ingenio Manuelita, a white sugar property producing for local consumption. He is also technical supervisor for the erection of a new white sugar factory at Ambalema, Departmento of Tolima. He says: "In this latter case I have no title, only the prenatal pains of getting the outfit perking and rolling sugar into the bag." He relates his experiences since 1907 as follows: "From 1907 to 1910 I was in Atlanta, Ga., as draftsman and assistant to the superintendent of the Ferro Construction Company and Pratt Engineering Company; from 1910 to 1911, in Louisiana as mechanic with the Oasis Sugar Company; from 1911 to 1918, in Puerto Rico as assistant engineer and chief engineer of various sugar houses; from 1918 to 1930, in Cuba as sugar engineer for the J. G. White Management Corporation for two years, then for three years I designed, erected, and put on an operating basis a 2,500-ton house for the Caribbean Sugar Company. They went broke, and Luce, with the promoters, was out. So he opened up, and ran, a sales office for the Farrel Foundry and Machine Company in Havana for two years, then for seven years, until 1930, served as general fabrication superintendent of three estates of the western division of Punta Alegre Sugar Company at San German. Cuba was badly hit with low sugar prices, and three of the top departmental men, including yours truly, again packed up our old kit bags. I left Cuba in 1930 for Martha's Vineyard, built a machine shop and carpenter shop and reproduced and repaired antique furniture. I was going strong, had Wallace Nutting's pet cabinetmaker, a finisher and upholsterer, a machinist, and a couple of lumpers; we had all we could do and were all getting something to eat when, Zowie! along came the financial wallop, my stocks and savings accumulated in sugar work went the way of the righteous, and I had a shop with icicles dripping off the roof.

"I buttoned up my collar and nailed a sugar job in January, 1934; renting my shop to an ambitious playboy, I made an inspection trip reporting on a Mexican sugar property. Then I landed a job as assistant manager of the Guantanamo Sugar Company at Guantanamo, Cuba, operating three sugar houses and properties. Probably I should be there still, but the following year my family joined me in Cuba, and in the fall of 1935 our son, 18 years old, contracted typhoid and passed on within ten days of the first symptom. In the summer of 1936 I accepted an offer from the United States Sugar Corporation to serve as assistant superintendent of their plant at Clewiston, Fla. This seemed to be the answer to a prayer to get out of Cuba and be active in my line in the good old U.S.A. I was there three years until my immediate superior, a German, figured on safety first, fired me, and a year later washed himself up with a .45. Then I landed a small repair job in Louisiana getting a little sugar house in shape to grind, turned it over to the owners, and again scrambled for cover. Next I tied up in Havana in sales engineering of the Oliver Filtres, traveling and messing around sugar houses installing equipment and showing them how to run it, and in January of 1941 was sent to Puerto Rico. Soon afterward the Honolulu Iron Works, cabling that they had a contract to supply and erect a sugar house in Colombia, asked whether I would be interested in taking over for them the field work. Answer yes. So I went to New York and sailed for Barranquilla at the end of September, 1941.

"I then worked a year at Ambalema in mud, rains, sunshine, and heat — with peons and the world's worst grub. The construction was about 75 per cent finished when it was held up by delay in getting materials due to the war. The owner of the property where I am now stationed is president of the new factory. He made me a very decent offer to come over and operate his property and at the same time carry on the responsibility of getting the new factory going as the material needed arrives. Thus I shall probably be in Colombia off and on for the next five years as I have a contract for that period as manager of this estate. The present schedule is that I spend ten months on the new construction until it is perking. It is some trip over the Andes to reach that place, taking two days to go 200 miles." Byron has a daughter, Eleanor, now Mrs. Ralph Mott, residing in San Francisco, who presented our classmate and his wife with their first grandchild in April of this year. Another daughter, Roslyn, now Mrs. Wesley Sadler, is in Liberia, Africa, some 15 days by carriers from Monrovia. Needless to say, I wrote to Byron in May at Vineyard Haven, Mass., thanking him for his fine letter and sending him the requested up-to-date list of members of the Class. I suggest that you who read this write him also, as has Phil Walker here in Whitinsville, who tells me he and Byron used to go canoeing together with their girls before either of them was married. — BRYANT NICHOLS, *Secretary*, 23 Leland Road, Whitinsville, Mass. HAROLD S. WONSON, *Assistant Secretary*, Commonwealth Shoe and Leather Company, Whitman, Mass.

1908

Our fourth meeting and dinner of the season was held at the University Club in Boston on May 8 at 6:00 P.M. The following were present: Harold Gurney, Karl Kennison, Steve Lyon, Ted Joy, Bill Booth, Linc Mayo, Joe Wattles, Jeff Beede, Sam Hatch, George Freethy, Linc Soule, and Nick Carter. Although Winch Heath couldn't attend the meeting he was with us in spirit, as you will note by the following letter from Miami, Fla.: "Being too far to come to dinner, I can only write my regrets.

"The orange season is over, as far as shipments go. We shall still get enough for local consumption. I am following up what appear to be good prospects for a job in more familiar lines, but shall not know the results for a week or two. If either possibility works out, I shall probably stay, at least for a while. Having all furniture in storage and no house or job to go back to, why not? The past week has been ideal weather, and the flowers, shrubs, and flowering trees are a surprising sight — the royal poinciana tree for example, now at its best. One near here is about 20 feet high, with a 30-foot spread, covered with gorgeous brilliant orange blossoms in clusters. The birds are numerous. We have brown thrashers, cardinals, very red redheaded woodpeckers, mockingbirds, doves, blackbirds, and jays all using the birdbath. The thrasher takes a real bath and spills most of the water before he is through. The mockingbirds and cardinals have been doing a lot of singing at night, which is not so good. Our postman is a girl, using a man's bicycle and wearing pants, but not a uniform. They all ride bicycles with big wire baskets on the handle bars. Many of the trolley cars are operated by women, but no busses as yet. The city operates trolleys, busses, water, electric *streetlights* (only), sewer, and gas. The commercial electric service is by Florida Power. The streets are brick-paved and, except for the central business section, have wide tree lawns with all kinds of trees and shrubs in them. The grass is Australian — more of a crab grass — planted in strings about six inches apart, filling in later. There is very little of the grass we are used to. I have seen one coconut palm with fruit growing on it in a street only two blocks from Central Avenue, and a few date palms. It is a very interesting city. The power company told me that they had over 70,000 meters connected and that the municipal trolleys carried 1¼ million passengers for the month of February; so you can see that this is no longer a resort town only, although it is now beginning to look in certain districts like a New England beach in October. At least I can get a seat in the trolleys now."

Bill Booth told us that he had become a grandfather on V-E Day, and Linc Soule said he was expecting. In place of our usual evening of colored pictures we had been able to get tickets for the annual meeting of the Engineering Societies of New England being held at New England Mutual Hall; so after a fine dinner most of us adjourned to the meeting. After a brief business meeting and the presentation of the New England Award to Frederic N. Bushnell, G. Ed. Pendray, assistant to the president of Westinghouse Electric and Manufacturing Company, gave a most interesting and instructive illustrated talk on "Rockets and Jet Propulsion." Dr. Pendray, after explaining "what makes the wheels go around," outlined possible commercial developments postwar.

We are sorry to report the death on March 30 of George Glover, who was one of the mainstays of the Class. Although George's home was in Lima, Ohio, he never missed a reunion of our Class. His infectious laugh and sunny smile will be missed by all. The following excerpt from the newspaper account will be of interest: "George Thummel Glover, sales manager of the Deisel-Wemmer-Gilbert Corp., was injured fatally and his wife is in Mt. Carmel hospital, Columbus, Ohio, suffering from cuts, bruises and shock as result of their automobile swerving into a ditch after blowing a tire. Glover had been prominent in Lima business and social circles since he came here in 1908 after graduating from . . . Technology. His first employment here was with the Lima Locomotive Works as a drafting engineer. A year later he married Eva Deisel. In 1911 he became associated with the Allis-Chalmers Co. in Cleveland and four years later returned to Lima as manager of the Deisel Co. He joined the sales staff of the Deisel-Wemmer Co. in 1916 and at the time of his death was sales manager and director of the firm which now is known as the Deisel-Wemmer-Gilbert Corp. Surviving are, besides his widow, three daughters, a son and six grandchildren."

Harry "Rap" writes, in part, as follows: "On Monday, the second of April, I was in Lima for the funeral service and found that George's faithful secretary had done very well in notifying many of us who were concerned. . . . No one can take George's place as a link between classmates, particularly for those of us who live at a distance from Boston. I have seen him at least twice a year, and often more frequently than that, over the past 40 years. The warmth of his interest in the Institute and in all the people whom he knew there was unabated by the passing of the years. His friendship was unfailing, and to many of us his death means an irreparable loss."

We are sorry to report also the death of Joseph W. Butler of Winchester, Mass., which occurred on August 14, 1943.

Charlie Locke '96, Secretary of the Alumni Association, kindly sent the following: "D. B. Myers has summarized his career by saying that he has specialized in petroleum in California. He was an engineer officer in the first World War, and after the war was over he interested himself in geology and the exploration for oil, with the result that he has served the Union Oil Company in California for the past 25 years. Quite recently his work has taken on a little more of the mining aspect since he has had to do with the diamond drilling, exploration, and research concerning bituminous sand deposits, which are now being investigated as possible additions to the country's oil preserves." Best wishes for a happy summer — H. LESTON CARTER, *Secretary*, 60 Batterymarch, Boston 10, Mass.

1909

It is with the deepest regret that we report the death of Bennie Dow, II, whom we all remember as a good center on the old class football team. The routine notice from the Alumni Office was followed a few days later by a letter to Paul from his wife Margaret, giving more details. He died in a Houston, Texas, hospital on May 5 of a heart ailment. Ben had a serious heart attack about four years ago, and I well remember the delightful call I had one sunny Saturday afternoon. Ben seemed to be making an excellent recovery. He looked well, and he acted like his old self. I liked his enthusiasm. He was a devoted attendant at the luncheons of the Class in New York, being at that time methods engineer of the Calco Chemical plant of the American Cyanamide Company at Bound Brook, N.J. In 1944, Ben went to Houston as budget director for Reed Roller Bit Company. I used to hear from him now and then. It seemed like a major move for Ben, who was born in Providence, my own home town, and lived in Dorchester while he was at the Institute, to pull up stakes and go south to a state that was over 200 times as big as his native Rhode Island. But Ben and Margaret seemed very much at home in the Lone Star State. I have written Margaret telling her how pleasant all my contacts with Ben had been and how I liked his warm-hearted enjoyment of everything he tackled. I have lost a good friend; and the Class, a devoted and loyal classmate. Ben was 59. (See the Review for January and July of 1944.)

"Once there was a fellow named Sleeper in the Class of '09 out of Dorchester High School. He wanted to become an E. E. but, by force of employment opportunities, he became instead an F.P.E. — that's a course M.I.T. has never listed, but some illustrious grads have made important contributions to the economic welfare of our country as fire protection engineers — for instance, Hap Ellis, Ben Pepper, Percy Handy, Frank Towle, to name some of the '09 men. This fellow Sleeper in due time acquired a wife, four sons, and a daughter, and then was forced out of engineering by the implacable law of supply and demand. The sawmills and woodworking industries of Louisiana, East Texas, Oklahoma, and Arkansas needed help and responded generously to an offer of fire insurance packaged with fire prevention and rate reduction services. The Sleepers migrated to Alexandria, La., later to Dallas, Texas, and in 1939 to Indianapolis, Ind. In 1930 the lumber industry in particular, and everybody else in general (remember?) suddenly lost interest in buying and became very much concerned with cutting costs. So Sleeper said to many manufacturers, merchants, bankers, and others in the Southwest, 'Pay me a modest retainer as a consultant, and I'll show you how to reduce your costs safely, without impairing the quality of your insurance.' The idea caught on, and he's been an insurance consultant ever since.

"For a long time this Sleeper was so busy learning the things not taught in colleges that M.I.T. and classmates were but dim recollections. Then suddenly he became very much awake to the importance of the schools as high school graduations began to catch up with him, and in the space of 12 years he proudly watched the youngsters (with a bit of financial assistance) as they acquired degrees in the special branches of their own choosing: Son Frederick G. Sleeper, Agricultural and Mechanical College of Texas, '31 — aeronautical engineer; Daughter Elizabeth C. Sleeper married her degree, C. Malcolm Davis, M.I.T., '31, X — petroleum engineer; Son David E. Sleeper, Texas University, '36, postgraduate, '37, business administration — geophysical exploration; Son Dwight W. Sleeper, Jr., Texas University, '39, business administration — First Army now in Germany; Son Richard C. Sleeper, Purdue University, '43, chemical engineering — now lieutenant pilot in the Field Artillery.

"And now that the major goal of giving each of the children the essential educational foundation has been achieved, this Sleeper — and his wife, Glenna, to whom he freely gives the credit — have found that there is time for other things than 'holding one's nose to the grindstone' and have transferred their business headquarters and home to Boston (winters) and to Cape Cod (summers) as native sons and daughters always do (or wish they could). They mean to enjoy the contacts and opportunities which now seem important and good — a judicious mixture of gardening and fishing, for one, of painting and homemaking for the other, and enough business to keep the kettle simmering."

John Mills, after 33 years of active service with the Bell Telephone System, retired on May 1 of this year. A few days before this date 300 of John's associates tendered him a dinner. John's was the last of several after-dinner speeches, and his subject was "New Horizons." That sounds exactly like John at his superlative best. He told me the other day that he was not only retiring but moving from his suburban residence to Manhattan! That's another side light on a distinguished classmate. John had a great deal to do with the perfecting of the technique that made possible telephone conversations to the Pacific Coast. All of us who attended the ceremonies in 1916 when the Cambridge buildings were dedicated will remember the banquet when we heard the surf of the Pacific pounding on the Seal Rocks at San Francisco. But I like to think of John, the Philosopher. At every class luncheon that he graced conversation at the table soon began to center about John. He took on all comers, and what a vivid recollection each of us will always cherish as we think of John mowing down the arguers who fired questions at him! And always so good-naturedly! As far back as 1925 he had a hand in founding the *Bell Laboratories Record*, the house organ of the laboratories, and for many years John has been director of publication for the books and articles issued. His interest in personnel problems led to his enunciating a successful formula for selecting new members of the laboratories staff. He was largely responsible for the smash-hit success of the American Telephone and Telegraph exhibit at the New York World's Fair in 1939. His tenth book, *Electronics, Today and Tomorrow*, has just been published. Certainly the Class wishes John well as he examines the new horizons that he sees pressing upon us! R. L. Jones, VI, vice-president of the laboratories, will be in general charge of the bureau of publication pending appointment of a new director. John attended the annual New York luncheon on April 7. (See The Review for June, 1945, and July, 1944.)

It seems like a coincidence that two members of the Class, Brad Dewey, X, and Chet Dawes, VI, each of whose names

begins with *D*, were simultaneously awarded honorary doctor's degrees by Northeastern University at its commencement exercises on June 3. The presentations were made by Dr. Carl Ell '11, President of the University. Brad received the degree of doctor of science with the following citation: "Because of your outstanding achievements in chemical research and in the efficient manufacture of many essential chemical products and because of your especially noteworthy contributions to the winning of the two great wars; to the first, as Chief of the Gas Defense Division of the United States Army; to the second, as administrator of the highly important synthetic rubber program of the United States and as a member of the Advisory Board to the Research and Development Branch of the Office of the Quartermaster General, the Board of Trustees have authorized me to confer upon you the honorary degree of Doctor of Science."

Chet received the degree of doctor of engineering, his citation reading: "Because, as a prominent electrical engineer, your work has been characterized by much significant research and scholarly production and also by a high degree of efficiency as a consulting engineer and because of your contribution to the development of high standards of engineering education throughout the United States, the Board of Trustees have authorized me to confer upon you the honorary degree of Doctor of Engineering."

Recently the slate of officers for the coming year of the National War Fund was announced, Winthrop W. Aldrich, the well-known banker of New York, being president. Among other officers is Edward L. Ryerson, I, of Chicago. Other M.I.T. men are Gerard Swope '95, chairman of the budget committee, and Thomas D'Arcy Brophy '16, chairman of the public relations committee.

Under a headline reading "U.S. Board named for Reich Control," an article appeared in our papers carrying the date line, Paris, May 26. Among the personnel of the board was Molly Scharff, whose citation follows: "Colonel Maurice R. Scharff, former assistant director of the production division of the Army Service Forces, to head the requirements and allocations branch and to pass on raw materials and components permitted the Germans." Molly serves abroad, of course, with Lieutenant General Lucius Clay as his superior officer. With Molly in Europe and son Samuel in the Philippines, Jeanne can say that she has indeed a global family. Our best wishes go to the widely separated Scharffs! Paul has received a most interesting letter from Sam postmarked May 1. It is so closely related to action down that way that we know you will all be glad to hear the boy's experiences: "I thought you might be interested in a report of a survey of the fried clam situation in the southwest Pacific during the last gastronomical year. Briefly, it's not so good! In some areas the raw materials are available, but the manufacturing skills are lacking. Examples of these benighted areas can be found in New Guinea, the Netherlands Indies, and in parts of the Philippines. In other areas — Australia, especially — the technical knowledge and facilities are available but the raw materials are not properly distributed.

"Enclosed is a sample of one kind of relic of the Japs we find here. I think if you could see Manila — another kind of reminder — you'd be heartbroken. It's literally smashed flat with the exception of a few buildings. I'm sure, though, that you've seen pictures of it. But you'll be glad to know that planning has already started: it may be more beautiful than ever! The work of this section I'm with out here is really quite interesting. It's also a bit exasperating since they don't want us to talk about it. One thing which the censorship regulations used to forbid is now permissible — the mentioning of places you've seen. I enjoy so much being able to do it that I write out the list just for the pleasure of being able to. In accordance with the regulations the order is not chronological: Burauen, Tolosa, and Tacloban on Leyte, Hollandia on Dutch New Guinea, of course; Morotai; San José in Mindoro, and Nadzab. If you ever need any expert opinion, for example, on the relative quality of the mud in these various places, just let me know."

This number marks the end of the third year during which the present Secretaries have attempted to carry on the duties that Charlie Main conducted so well for 33 years. We don't expect any medals, but we have all tried to make everyone feel that we are still the same big family that left the Institute just 36 years ago. (Where has the time gone?) Each year has seen an increase in the interest in class affairs among 1909 men, and this year material for the notes came to us almost without the asking. In fact, at times we exceeded our space allotment and were obliged to carry items over to the next number. At other times we helped the Review editors by having some material available to fill unexpected gaps. We are deeply indebted to Theodora Keith '32 of the Review staff for her editorial work as well as for her cooperation and guidance in how much material to submit and the best way to do it. In April she wrote, "But it looks to me as if you were about the last secretary who needs to worry about running short of material!" Sometimes in the past we have, but we know that you folks won't let it happen again.

Since you won't hear from us again until the November Review appears, we close by wishing you all a most happy summer and look forward to hearing from you again in the fall. — Paul M. Wiswall, *Secretary*, 90 Hillside Avenue, Glen Ridge, N.J. Chester L. Dawes, *Review Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. *Assistant Secretaries:* Maurice R. Scharff, 3860 Rodman Street, Northwest, Washington 16, D.C.; George E. Wallis, 1606 Hinman Avenue, Evanston, Ill.

1910

Again I have the sad duty of reporting the passing of a classmate, William L. Enfield, on March 21. The following is from the New York *Herald Tribune* of March 23: "Dr. William L. Enfield, widely known electrical engineer and former manager of the General Electric Company's lamp-development division at Nela Park, died . . . of a heart attack. He was sixty-three years old. Largely responsible for development of the fluorescent light, the sealed-beam automobile headlight, the inside-frosted light bulb and the photoflash bulb, Dr. Enfield was consulting engineer at Nela Park in research on electrical equipment for the armed forces. Dr. Enfield was born in Chase, Kan., and was a graduate of Kansas State Agricultural College and . . . Technology. He began his career as an engineer for the manufacturing department of the National Lamp Works in 1911. He went with General Electric in 1926 and became consulting engineer in 1940."

Frank Bell has certainly been in the worst of this war, compared with other members of the Class who have donned the uniform. He was in Germany when he wrote as follows in a short V-mail letter on April 28: "In the towns where the Krauts put up a fight a thorough job was done, and you may rest assured that it will be many years before those sections will have the stomach for another war. We have been moving fast — mostly around the clock — on military construction. Germany was in far better shape intrinsically than France or Belgium, but conditions are now a bit chaotic. Prisoners pouring in by the hundred thousands and freed slave labor — Russians, Poles, and so on — running wild and paying back the score on the Krauts, and the Krauts squawking to us for protection, when we already are busy fighting this war to help." Frank also stated in his letter that he had elected me by proxy to the P.I.R. Club. I shall be delighted to give full details of this club upon written request.

The New York City group which is running the monthly luncheons is proving that 1910 members are intensely interested in M.I.T. All that is necessary to get a crowd together is the proper priming by an energetic few. I expect to be out of uniform by the time these notes are published, and I hope I may then be able to give more information about our classmates. — Herbert S. Cleverdon, *Secretary*, 117 Grant Avenue, Newton Center 59, Mass.

1911

At last we have official confirmation from a recent issue of the *Army and Navy Journal* that George Kenney, I, is a four-star General. General Kenney, the Class salutes you! Johnnie Scoville, IV, who is with Sanderson and Porter, engineers and constructors at 52 William Street, New York 5, sends an addition to the Kenney saga, clipped from the *Herald Tribune* of May 16, in the column "The Air World," describing the serious plight in Australia in December, 1942, with the Japs within 40 miles of Port Moresby. "It was then," columnist Gill Robb Wilson says, "that our General George Kenney proposed to General MacArthur that, using the tiny air transport organization, he could haul a regiment of Australian diggers 1,400 miles from Brisbane to Moresby and stop the Japanese on the Owen Stanley trail. This was regarded impossible but the only remaining hope. . . . During the process air transport planes kept the diggers supplied by parachute . . . every pound of material used in that campaign was air-borne. Thus air power, in the form of small unarmed transports, gave General MacArthur the key to his journey back and started that strange friendship between him and Kenney, for never were two men more dis-

similar in disposition, background, or conception." Johnnie, who maintains his residence at 44 North Quaker Lane, West Hartford, Conn., and commutes for week ends, also sent an obituary recording the death of Mrs. Ann Eliza Scribner Yereance, mother of Aleck Yereance, XI, at Bloomfield, N.J., on May 10 at the age of 79. Her husband, with whom she celebrated a golden wedding anniversary in 1939, and three daughters survive her.

Sidney A. Patchett, who was with us in the freshman year only, died at the Mary Alley Hospital in Marblehead on April 3. He is survived by his wife, a son, Sidney A. Patchett, Jr., a lieutenant, junior grade, in the Naval Reserve now in service in the Pacific, a daughter, Margaret, and two grandchildren, also by his parents, who live in Stoneham, Mass. At the time of his death he was with Colley-Maier, Inc., naval architects at 92 State Street, Boston, as their chief engineer. In February, 1943, he was called by the War Shipping Board to go as chief engineer in the Liberty ship *Daniel Webster* and until March, 1944, when ill health forced his retirement, made several trips to England and the Mediterranean, visiting North Africa, Sicily, and Italy. According to a Marblehead columnist, several of the voyages were beset with submarine peril and actual attacks, and a testimonial given by the crew when Sid retired reads: "In pure admiration and respect for our Chief, we, the licensed and unlicensed personnel of the S.S. *Daniel Webster* would like to express our appreciation for the courage and patriotism shown by our Chief Engineer, Sidney A. Patchett, during submarine attacks in the North Atlantic. His presence below during attack bolstered the morale and sustained us all during a perilous and harrowing voyage." During World War I, Sid was called to Washington several times for consultation on Diesel engines, and a number of his suggestions were adopted as specifications for the engines then being built for the government. Our sympathy has been expressed to his widow, who, with her daughter, resides at 16 Franklin Street, Marblehead.

Bob Haslam, X, has done it again. He recently spoke before the Chamber of Commerce of New Brunswick, N.J., on the subject, "United We Stand." "Today we are aware," said Bob, a director of Standard Oil Company (N.J.), "of the danger of division among the free nations. But we are not keenly enough aware of the danger of division among ourselves. We are accustomed to thinking that such terms as 'divide and conquer' apply only to groups of nations. However, if our thinking goes no further, we run grave risks, because divisions just as drastic in their consequences can occur among groups within a nation — groups whose differences are social, religious, political, or economic." Referring to the existence, in various forms, of prejudice based on racial or religious differences, Bob said, "The mental and emotional habits which go to make up prejudice are largely the consequences of what may be called 'label thinking,' and unless a majority of us learn to guard against this kind of thinking, it can endanger all that we hope to achieve as a nation in the years ahead."

Developing four glaring examples of label thinking, Bob first spoke on government versus business, saying that today, largely because of the war, our government is the biggest business the world has ever seen, "but in the face of war emergency, government turned to private business for the skill it needed to achieve its colossal war production. In fact," he continued, "it is difficult to define to what degree government is in business and business is in government. . . . It is not government *versus* business but government *and* business."

Asking where label thinking is leading us if we accept as fact an irreconcilable conflict between management and labor, Bob told of "a saying in Standard Oil of New Jersey that 'whenever a president of Jersey Standard dies or resigns, a new office boy is hired.' The directors of Standard," he added, "are workingmen, and they came up through the ranks. The 11 of them who sit every day around the table in the board room have been in the company's service an average of nearly 27 years; but as directors they have served an average of only six years. The basic aims of both labor and management are, of course, the same. They are both striving to increase production, to improve living standards, to produce more for the benefit of everyone. They need each other. If they fail to cooperate, the enterprise that supports them both will fail, and both will be looking for jobs. Again, it is not labor *versus* management, but labor *and* management."

For his third premise he discussed the common man versus the capitalist. "People just can't be lumped into classes," he said, "labeled 'capitalist' or 'common man' or anything else. A man may be a capitalist — that is, a saver — but he is also many other things: a citizen, a father, a Presbyterian, a Democrat, a worker with his hands, a consumer. If we fail to recognize this composite nature of all our citizens and the single nature of our goal, we are promoting consciously or unconsciously the very division of the American people, class by class, minority by minority, which may weaken or destroy all that we value."

As a final illustration of label thinking, he took up big business versus small business. "The point is," said Bob, "that there is no real line of demarkation. Bigness indicates merely a direction, and it is unlikely that a point is ever reached in this process where the owners or management suddenly pause in their perusal of the sales reports and shout, 'Hooray, now we are big business!' Or perhaps, instead of 'Hooray,' they might cry 'Alas!'

"The real danger in the careless use of these labels is that they imply an inherent good or evil in the mere fact of smallness or bigness, an implication which of course is erroneous. If we permit ourselves to talk as though size alone were good or bad, we only obscure the real problems and delay their solution. But no matter how large the investment or how widespread the facilities of a business, its size is relative. . . . Far more important than mere size is the relation of the various units in an industry to one another. The Jersey company, like many other large organizations, is an integrated business and is vitally dependent all along the line of its operations upon others — to furnish it raw materials, to transport its products, and to sell and deliver them to customers. The chief difficulty faced by small business is lack of knowledge — the kind of knowledge which a large organization with its greater resources applies daily in its research, manufacturing, marketing, and record-keeping. So elementary a matter as lack of proper accounting is often the reason for small business failures. On the other hand, small concerns can exercise a closer control over their operations — a real advantage over the larger organizations. The way to help small business, therefore, is not to destroy big business, but rather to find ways of making the advantages which big business enjoys available to small enterprises. . . . American business is an integrated structure in which each part derives its strength from all the others . . . it is small business *and* big business — not small business *versus* big business."

In conclusion, Bob said: "At this crucial point in our history we must guard against loose thinking, against judgments based on labels rather than realities. We need a greater appreciation, by big business and small business, by those who live on large earnings and on small earnings, by management and by labor, by government and by business — by all groups — that we are not a nation of groups in conflict, but a nation of individuals with common objectives. Great problems lie immediately before us. With sound judgment, American democracy is fully capable of meeting them. But the judgment of the American people will be sound only if it is based on ample and accurate information, if it is not distorted by the prejudices inherent in label thinking, and if it is based always on the principle affirmed by the motto, 'United we stand.' "

By the way, O. W. Stewart, I, sent me a tear sheet from a recent *Science News Letter*, adding that Bob sure must be an optimist! Read this: " 'The quality of gas has gone down during the war about 15 octane numbers so that today it is approximately the same as that used by motorists 12 years ago,' said Robert Haslam, director of Standard Oil Co. (N.J.), 'and now everyone notices the poor quality of gasoline, since the best is going into aviation gas.' " — Pete Gaillard, VI, writes from 839 Seventeenth Street, Northwest, Washington: "As a constant reader, but a very intermittent contributor to the class notes, I hasten to disclaim the rank of colonel, being a lieutenant colonel. Those of our classmates who have made their full colonelcy deserve a lot of credit and certainly deserve their rank. More power to them! For the last year I have been in charge of technical intelligence on enemy ordnance, a very interesting assignment. I hope I can stick it out at least until after V-E Day."

Here is President Don Stevens' fine tribute to the late A. V. de Forest, XIII, expressed in his letter of sympathy to A.V.'s widow: "We are very proud of the long list of notable names who were graduated on a common level 34 years ago. I should hesitate to present a list because I am sure that I should overlook someone who is quietly 'hiding his light,' and I have always felt that in 1911 we do not point out winners because all were such good men and many a man may be a winner in

his own quiet influence and personality without ever making the headlines. Alfred Victor was a winner both ways. He made the headlines, and yet no man of our Class could possibly have had a finer influence for quiet good and a more winning personality. I wish that our paths had crossed more often and that I could have known him better. I have always watched his progress with the greatest of satisfaction. We wish that Alfred Victor de Forest could continue with us. We know that his influence will always be with us."

Bert Fryer, VI, writes from Carnation, Wash., where he is a consulting lumber drying engineer: "I saw this clipping [a picture of Paul Kellogg, IX, with subhead "General manager of the Newsprint Association of Canada will speak at a luncheon meeting of the advertising and sales bureau of the Vancouver Board of Trade"] in a Vancouver paper on a recent trip. I will write you a letter soon but am getting the crops in now, or shall be, if it ever stops raining. If you are in the market for butter, I have it." — Mabel Herlihy hears quite frequently from Mrs. Dows, wife of Chet Dows, VI, in Cleveland, Ohio, and reports that the Dows' enjoyed an Easter visit from their son, Dick, home on leave while en route from New York to Camp Polk, La., to join his engineering maintenance unit. — Speaking of Louisiana, Ted Van Tassel, X, a major in the Medical Department, writes from Camp Polk, La.: "Recently, when I tuned in my radio and heard the V-E announcement, it reminded me of the 1911 class dinner at the Boston City Club during which we were interrupted by news of the celebration of the announcement of the Armistice ending World War I. My boy, Bill, was last heard from in Italy and should ship soon from there for the Jap fracas."

In Worcester one day recently, I stopped to see Harold Robinson, I, at his new office, 311 Main Street, Worcester 8, but unfortunately I missed him. I also read in the Worcester *Telegram* lately that Johnnie Bigelow, IV, was re-elected secretary of the Marlboro (Mass.) Rotary Club for the steenth time; and from the Alumni Office I learn that Ban Hill, I, is now residing at 1812 Sulgrave Avenue, Mount Washington, Baltimore 9, Md. — My thanks to you, classmates, for your continued confidence in re-electing me as class representative on the Alumni Council for another five-year term.

It was our own Bunny Wilson, XIV, Vice-president in charge of operations, whom Alcoa chose to convince the Senate small business committee shortly after mid-May that Secretary Ickes had made "glaring misstatements" when accusing the Aluminum Company of America of a direct connection with the Aluminum Company of Canada. Wilson's statement declared that none of the officers or employees of Alcoa had any knowledge of an arrangement this government had made with the Canadian aluminum company, and further he quoted from antitrust proceedings earlier this year that "at no time has any director or officer or employee of Alcoa been also a director or officer or employee of Aluminum, Ltd."

Before closing, I'd like to call attention to the fact that we are just a shade behind our initial pace in last year's record-making Alumni Fund campaign, for the first month's figures a year ago showed 61 of our Class giving an average contribution of $21.27 while this year's first month produced 57 donors at $20.70 average. Speed 'er up, mates! So ends another volume of 1911 class notes — as always a constant joy to compile. If you fellows continue to enjoy them, that's my reward. And now to all, best wishes for a much needed and enjoyable vacation sometime this summer, and then when autumn comes, "Write to Dennie!" — Orville B. Denison, *Secretary*, Chamber of Commerce, Gardner, Mass. John A. Herlihy, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

1912

Eric Kebbon, architect, New York Board of Education, has received publicity in connection with the postwar city school building program, which will provide 80 new schoolhouses for the five boroughs.

In the final figures covering the Alumni Fund for 1944–1945, our Class had a quota of 130 contributors and obtained contributions from 125 of the Class. We must do better. The dollar quota was $2,990, and $2,516 was pledged — or 84 per cent. We must also improve this figure, as the classes on both sides of us are higher in both respects. Let's make a good showing for next year. — Frederick J. Shepard, Jr., *Secretary*, 125 Walnut Street, Watertown 72, Mass.

1913

Collections for the 1945–1946 Alumni Fund year began on April 1. Two years ago we reached our quota; last year we fell down. We had 150 contributors, with an average gift of $22 a man, whereas we needed an average gift of $25. Won't you, a Review reader, please do one of two things? (1) Write your check for an amount equal to that of last year plus three dollars, or, (2) if you have mailed your check, send another one for three dollars. Larry Hart, our Class Agent for the Fund, has worked hard to get as many as 150 contributors, and this extra three dollars from each of us will be a small reward for his efforts.

Charlie Thompson, X, has acquired his first grandchild, Joan Carol Crandall. He writes that 1913 had a slim attendance at the midwinter Alumni gathering, consisting of himself, Gordon Howie, I, Bill Ready, VI, and Jim Russell, II. Charlie sees Bill Mattson, I, frequently. Bill is president of the Men's Club at their church. Jean, the daughter of Ralph Rankin, VI, was married on March 24, at home, in Port Washington, Long Island, to Robert L. Hollis, a second lieutenant in the Marines. W. L. Whitehead, III, XII, who has been in charge of geological exploration for aluminum ores in Haiti, Puerto Rico, the Dominican Republic, Cuba, and Mexico, for the Reynolds Metals Company, has recently returned to the Institute. Discoveries of bauxite made in Haiti by the field parties are being developed by the company. Karl Briel, I, is working on a war project with Nat Sage, I, at the Institute.

Larry Hart's letter of February 27 brought this sad news: "I regret very much to report that Daniel Ellwood Lewis, X, passed away on January 20 as the result of a heart attack. Dan was born in Lansford, Pa., on August 8, 1887, and was graduated with our Class. Although I had not seen him since, I remember him very well, and undoubtedly you do also. He is survived by his wife, Anna E. Lewis; a daughter, Mary Lewis Hawley; and a son, Captain Henry Lewis of the Marine Corps, now serving in the South Pacific area. Dan was a member of the John D. Spreckels Masonic Lodge No. 657 at San Diego, Calif. I have written to Mrs. Lewis." — Frederick D. Murdock, Murdock Webbing Company, *Secretary*, Box 788, Pawtucket, R.I.

1914

Two recent weddings are of interest to us. On April 28 at Worcester, Mass., Barbara Johnson became the bride of Lieutenant Lloyd Anderson of the Naval Reserve. Miss Johnson is the daughter of Arthur W. and Mrs. Johnson. One of the ushers was Chester A. Corney, Jr. Some of us may recall that Art Johnson's wife is Chet Corney's sister. Lieutenant Anderson is a graduate of Columbia University, and his wife attended Bates College in addition to being a graduate of the Massachusetts General Hospital school of nursing in Boston. On May 13 at Miami, Fla., Joan Frances Rathvon of Mamaroneck, N.Y., and Ensign Shaw Mudge of the Naval Reserve were married. Ensign Mudge is the son of Arthur W. and Mrs. Mudge of Greenwich, Conn. He is a graduate of Yale University, and his bride is a graduate of Vassar College.

If anyone doubts the magnitude of the personnel problem in the wartime expansion of the aircraft industry, he should read an article by Don Douglas in the April 15 issue of *Automotive and Aviation Industries*. It is entitled "Labor Turnover No. 1 Problem at Aircraft Plants." It presents plenty of food for thought.

Your Secretary recently had a very pleasant visit at his plant from Porter Adams, who spent the afternoon not only visiting the various departments but actually operating several machine tools. As a sort of physical therapy to help rehabilitate his limbs, Porter has taken up the use of machine tools through a regular course at the Wentworth Institute, and is considering taking the machine-tool laboratory course at Technology. He was always interested in equipment design and holds a patent on an adjustable golf club. Perhaps he will demonstrate it for us at our 35th reunion. In spite of his need for crutches Porter can show many a classmate — including Dean Fales by Dean's own admission — speed in getting about. — H. B. Richmond, *Secretary*, General Radio Company, 275 Massachusetts Avenue, Cambridge 39, Mass. Charles P. Fiske, *Assistant Secretary*, 1775 Broadway, New York 19, N.Y.

1915

Although the race is not always to the Swift (unless to our own Herb Speed Swift), at your present rate you should easily win this year's Alumni Fund race. On May 28, 100 (57 per cent) had given $2,223 (77 per cent). We had not reached this total last year until August 1, so you can see how far ahead we are. Keep up the good work.

On May 18 we had a regular 1915 class dinner at Walker Memorial, M.I.T. James W. Tonra, chief, and Arthur Charlton, fingerprint expert, of the Brookline, Mass., Police Department gave us an informal talk on "Crime, and its Scientific Detection." I leave you to judge the humorous remarks made by the audience regarding the similarity of appearance between some of the Rogues' Gallery pictures of criminals shown on the screen and certain of our classmates. The following men enjoyed one of Bert Bridges' delightful dinners and a pleasant evening: Chief James W. Tonra, W. Arthur Charlton, Henry Sheils, Azel Mack, Marshall Dalton, Louis Young, Louis Gale, George Moulton, Albert Wechsler'21, Abe Hamburg, O. Ricker Freeman, Loring Hayward, Wayne Bradley, Clarence T. Hansen, Paul Weymouth, Bernard Landers, John O'Brien, Frank Herlihy, Weare Howlett, John Homan, Bert Adams, Bill Brackett, Whit Brown, Seward Highley, Waldo Pike, Edward Sullivan, Frank Murphy, Horatio Lamson, Frederic Waters, and Ernest Weaver.

The long distance prize went to Wayne Bradley, who came up from Bridgeport, Conn., wiring in advance, "Keep mine on the back of stove — arriving seven o'clock." A number of our regular attendants were unfortunately absent. Frank Scully was in Denver on a trip, incidentally hoping to see some of our classmates in the Middle West. At the last moment, George Rooney had to hurry away but sent his best regards: "To those hydraulic engineers of 1915 — you know the study-of-flow-of-liquids boys." We hoped up to the last minute that George could come, but when we noticed he had checked a preference for meat on the return postal card for a Friday night dinner, we were convinced he would not be there. Frank Herlihy, gaily present, wrote in: "How could anyone with a conscience pass up one of these class dinners?"

Carl Dunn was in Boston from Chicago and talked with me by telephone. He is looking forward to an expanded postwar business in the installation of his Bedaux system. Carl is vice-president of Albert Raymond and Associates, Inc., engineers, Tribune Tower, Chicago 11, Ill. Abe Hamburg's son, David, was one of a few soldiers selected from a southern training camp to study the Japanese language at Chicago University. Naturally, Abe is proud of this and showed us one of his first lesson papers. They looked like enlarged laundry checks. — Another pretty wedding! On Saturday, April 14, I watched Bert Adams walk down the aisle of the Harvard Congregational Church at Brookline, Mass., to give his daughter, Helen Judson, in marriage to Richard Henry Amerman. All our best to the new young couple!

One of our guests at the Boston dinner was Louis A. Gale, manager of the plating and finishing department of the Gillette Safety Razor Company in South Boston and an associate of Louis Young, who is vice-president of the company. We were pleased to have Louie Gale with us and appreciate his letter: "I am very grateful to you and the members of your Class for having been so kind and hospitable to me — just an ordinary guy. I feel highly flattered. . . . I spent a most enjoyable evening at your class dinner and appreciate your kind invitation to attend future dinner gatherings."

Marshall Dalton always sends me the yearly reports of the insurance companies of which he is president. They make interesting reading and always impress me with the able leadership that Jack gives these important companies. Jack came out of his modest retirement to write us about his two lovely daughters: "First, let me say that the class dinner last evening was great, and if all the other classmates who are near enough to come would get the habit as the regular crowd have, such occasions would be just that much better . . . My older daughter, Meralyn, is with us for the duration, while her husband, who is a lieutenant (junior grade) in the Navy, is doing his duty. She is working for one of our companies while awaiting his return . . . My younger daughter, Madylin, is a lieutenant in the Army Medical Department — a physiotherapist — stationed at the England General Hospital at Atlantic City, where she is working mostly with boys who have been paralyzed by spinal injuries. Her special interest is nerve and muscle re-education. She loves the work and the opportunity to have this direct part in war service. Her fiancé is an infantry lieutenant with a division in the Philippines where they are still very, very active blasting the Japs out of the mountain caves and other places where Japs dig in. . . . As for myself, time does not hang heavy on my hands, but I have no monopoly in that condition. I am saving a date for the next class dinner in the fall." — Whit Brown of Concord, Mass., spent a pleasant day at the Hodgman Rubber Company in Framingham, with Max Woythaler and Weare Howlett. That's a lively trio anywhere; so it must have been a friendly small-sized reunion in itself.

A rather late, but interesting, repercussion of the class dinner at Ralph Hart's apartment in New York comes from Howard King, writing from Mason and Hanger Company in Baraboo, Wis.: "I am sorry that I cannot be present at the dinner on February 2. I am now engaged in the building of a brand new plant for the production of war materials. We are pushing it as hard as we can. I cannot get away. . . . For all practical purposes, I am frozen here, not meteorologically, although we have had some cold weather, but by the pressure of circumstances . . . And speaking of 100 Riverside Drive, I recall that it took me some weeks after my last visit there to get back to my usual state of mind, which is, admittedly, a little on the static side, but I believe normal for my age. There is just a trace of relief that I am not going to have to face another upset right away." Any of the boys who were at Ralph Hart's will get a chuckle out of the references Howard makes. — Bill Brackett gave another class luncheon on June 16 at his home in Newton — in short, another of those lively 1915 afternoons.

After a pleasant visit with me in Boston, Parry Keller writes from the University Club at 105 Fir Hill, Akron 4, Ohio: "I am back at work in Akron after an enjoyable vacation in Boston. . . . It did me a lot of good to go back, look over the old stamping ground, get together with old friends, and visit relatives. . . . Azel, I certainly did enjoy that evening we spent together in Boston. Everything about it, as far as I was concerned, was excellent. The sherry, the food, the cigars, the conversation, and last but not least, the company, were all up to, and better than, specification and added up to a fine evening. . . . I had lunch with Herman Morse and gave him your greeting. He asked me to thank you and to return the compliment for him. . . . I have taken your lecture to heart and am writing a letter to Henry Daley. I hope he understands that I am one of the world's worst correspondents and that the shock of getting a letter from me is not too much for him. . . . You may be slipping a bit yourself for you have not dunned me for class dues for a long time. I don't believe that our treasury is in such a plush condition that more dues are of minor consequence. But to eliminate all conjecture and get off your delinquent list I am enclosing my check. . . . I read The Review each month and never miss your column. In fact, I get quite a kick out of your notes. You are making a good job of it. I am ashamed that I have not 'helped Azel' in this respect. You certainly have developed over the years a loyal staff of major league, aged-in-the-wood correspondents and contributors. I am well aware of my own amateur rating in literary stuff, but I shall try hard to make the grade and actually 'help Azel.' My secretary says, 'Enough of this for now — it is time for you to go to work.' Therefore, so long (temporarily), and remember me to all the boys."

Reliable Kebe Toabe writes from 408 Winthrop Place, Elizabeth 3, N.J.: "It is a great disappointment that our reunion had to be called off. But if it had to be — well, it had to be! I know we shall all get together more often when the war is over. . . . My son, Sidney, is a corporal in the Marine Corps and . . . with only eight months overseas was in two campaigns, Guam and Iwo Jima. He was wounded in both campaigns and to our surprise found himself back in the States the first of April, in the United States Naval Hospital at Corwallis, Ore., for a month. He came home today for a 30-day furlough, full of energy, very cheerful, and of course glad to be at home. After what we have heard of the action and casualties, I thought I'd have to tell you that my boy is back all in one piece and full of pep. Please count me in on any class activities you may have in mind in the near future, and give my best wishes to all our classmates."

From Hotel Fairgrounds, St. Louis 7, Miss., Sanford Willis writes: "Your letter with the unwelcome news about the reunion arrived this morning. I suppose that giving up our reunion is little enough for us to do for the war effort, but I had been hoping that the impending end of the European phase might make a change in the prospects. . . . I expect to be back East in the not too distant future for a few days at least, and should business take me toward Boston, you may be sure that I will give you a ring. I am hoping to make my trip coincide with my vacation so that I may have a week or two alongshore because I have no desire for an unbroken summer here, where the heat is ungodly. . . . For the record I am technical consultant for the Mississippi Glass Company on a full-time basis, in charge of new product and market developments plus doubling in brass investigating and testing new process techniques. Mrs. Willis is with me and isn't at

all reconciled to the change of base. . . . My family is scattered hither and yon. Peggy married a lieutenant in the Air Forces who is now a troop transport pilot in Europe. She has a son and is living in White Plains. June, my younger daughter, was one of the first 12 enlisted SPARS but after about a year quit the service upon her marriage. She also has a son and is living in New York City. . . . Sumner tried without success to get into some branch of the service but was turned down flat because of his old back injury. He finally took a tool-setters job with Remington in Bridgeport and was senior engineer of tooling and equipment at their Kings Mills plant when the small arms ammunition program folded up four years later. During the interim he was assistant production man of the rim-fire area at Bridgeport and later headed the small arms perishable tool steel procurement program. He is now chief engineer of the Blue Channel Corporation in South Carolina and is engaged in devising automatic equipment for picking the meat out of crabs. He, also, is married and has two sons. That is the lot! Best wishes to all the gang whom you may see."

Bill Mellema writes from 1663 Beverly Boulevard, Los Angeles 26, Calif.: "Congratulations on the splendid job you are doing. . . . Elwin Norberg, who is assistant architect for the board of education of Los Angeles and has charge of the architectural department, was installed as Grand High Priest of Royal Arch Masons of California and is also Commander of Commandery No. 9 of Knights Templar. Ray Stringfield and I saw him installed. He makes a splendid presiding officer. . . . My son, Bob Mellema, is an air cadet at Lowry Field, near Denver, Colo. If any of our classmates have sons there, I would suggest that they look him up. He is six feet two, good-looking, and good company. . . . My daughter, Carol Jean, is 15, will be graduated from high school next year, and expects to go to college, possibly in the East, but has not yet decided."

Then, from good Ben Neal in Lockport, N.Y., comes this fine letter: "Your note of the first is quite a disappointment because I really hoped that, even as some last minute proposition, we might have a 30th reunion this year. I agree with you, however, that under the circumstances it is wisest to forget it. . . . Barbara's husband was transferred to Buffalo territory the first of March, and accordingly Barbara and Jimmie, Jr., have been living with us since then. It has been very enjoyable to have a youngster in the house once more. They bought a modest home in Buffalo and are planning to move up there next week. . . . I saw Gabe Hilton for just a minute when he was at the Tuscarora Club in Lockport with one of his old stand-by customers. Unfortunately, it takes you to get us together, and despite one or two attempts we have not been with the Hiltons since you were here last summer. . . . I hope to leave soon for a couple of weeks in Canada with a bunch of fellows on a loafing and fishing trip. I can only trust that the old place will run, with all its problems, while I am gone. . . ." I am looking forward to the pleasure of curing that estrangement in Buffalo between the Hiltons and the Neals when I get there next summer. As readers of these notes know, we always have a marvelous visit together."

Here endeth this year's column of class notes. Any one of you who is in Boston this summer must be sure to look me up. My office telephone is LIBERTY 8815, and my home, LONGWOOD 3438. Many thanks, many blessings, all the best, and the same old refrain will be heard in September, "hel pazel!" — AZEL W. MACK, *Secretary*, 40 St. Paul Street, Brookline 46, Mass.

1916

Your Secretary has just received the following most interesting communication from our classmate, Dave Patten: "With the arrival of the January Review a few weeks ago, came the request in our class notes for information on the whereabouts of one Dave Patten. Here you have an answer from the 'horse's mouth,' with apologies for the use of the first person pronoun — in Manila.

"I can't say 'I have returned,' but as one of the naval attachés of the staff of the hero of Bataan, I have trailed along from Australia. Briefly, after detachment from my old job in the Navy Department, my trans-Pacific Boeing Flying Boat came to a smooth landing on the Brisbane River, Brisbane, early in March, 1944. With two previous long flights to the Aleutians, one of which passed over Chukotski Poluostrov, the northeast tip of Russia, 100 miles or so above the Circle, this transoceanic hop was run-of-the-mill, and monotonous to boot. Flag stops at Canton, Palmyra, and Espiritu only seemed to emphasize the distance, but actually elapsed time from San Francisco was only about 75 hours, and flying time approximately 50. From March to August we were based in Australia. We found the 'natives' extremely friendly, the pulchritude of land and lassies enchanting (will gladly pass on addresses to any interested classmate), and hunting of the less elusive duck and kangaroo a joy to any Nimrod. On occasion, we flew to the firing line of our objectives to see our plans in execution. My assignment then was G-4 Planning; now, Operations.

"The efficient Office of War Information, and no less MacArthur's communiqués, have kept you well informed on the strategic advance of the commander in chief. Chronologically, on April 20 our efficient Seventh Fleet, which was to distinguish itself later by annihilating most of the Japanese Navy, put General Krueger's Sixth and General Eichelberger's Eighth Armies ashore at Hollandia, Dutch New Guinea. About 10 days later five staff observers (feather merchants out here, of which I was one) flew in to land on the first captured air strip. The Japs were still arguing our possession of the far end of it, this being less dramatic than sporadic, for General Kenney's (M.I.T. '11) Fourth Air Force had already done a magnificent job of bombing and strafing. We were on our way to observe the next bit of island hopping, to wit the first assault landing west of Tokyo, at Biak Island on May 20. Here we had our first taste of Jap suicide planes.

"This tale is getting too long, so I will do a MacArthur by-passing of New Guinea, that fabulous land of mangrove swamps, impenetrable jungle, rain forests, snow-capped 17,000-foot mountains, pygmies and paradoxes, where we were based from August to December. We could always make the easy hop to Australia from there, and those Aussie friendships died much harder than the Japs. The land where Kipling's great south Otway gums bend to the great south main was a paradise to us then. On October 20 came the first landing in the Philippines, at Leyte. The battle of Leyte Gulf, when Tojo threw nearly his whole navy at us, came a few days later, and thanks to the able strategy of Admiral Kinkaid (I was at Kiska with him in July and August, 1943), plus the air force, we sank most of it, as you know. In January, we were based at Tolosa, Leyte Island, from which my paths fanned out to the islands of Samar, Cebu, and Mindanao. Zamboanga, at the latter island's southwest tip, famous for the monkies with no tails, now has many dead monkies bearing tales no longer. These were the species *illegitimaticus jaune* (see comments by Admiral Halsey).

"Now, to Manila — this former Pearl of the Orient, the biggest in the string of Philippine cities, has been snatched from the hairy chest of Japan, crushed, and fire blackened. It's former luster is dimmed by the blood of thousands — first, those gallant defenders of the lost cause of 1942, followed by the rape and murder of the innocent, who bore no arms in combat. Most of the main city lies now in one huge mass of rubble, from which creep weary, war-stunned starving people, stray cats, and repulsive odors. The harbor is littered with sunken ships from Admiral Mitscher's death-riding Valkyries. Commander Sullivan '17, of *Normandie* salvage and French and Italian harbor clearance fame, has a huge task here.

"With pictures, this account might be really interesting. In retrospect, it's too long, and I regret I'm not a Marquand, a Parkman, or a Wells — or even a Quentin Reynolds. The great climax lies ahead, and with the greatest array in the world of naval and land forces, in which we share the laurels with England, Australia, the Chinese, and the Dutch, to be followed shortly by the Russians, we hope, victory is assured. Victory at arms! For the peace we all long for, 'not as an end to war, but an end to the beginnings of all wars' (F. D. R.), the fight has just started. Victory here is as surely and as wholly in our hands as has been the combat at arms. I find myself asking what a sacrifice of material comforts, of selfish isolationism, of tariff barriers against world trade are we as a nation willing to make, and have we the vision to see, in the long years ahead, that this second world conflict may not have been in vain. The dead are silent; the maimed and the wounded and the catastrophic ruins remain.

"I called two days ago at Malacanan Palace, temporary seat of the Philippine Islands Government, to discuss with Mr. Croft, city planner, the new Manila. For the interest of Technologians, again I found that his able assistant, a Filipino, had obtained his training at M.I.T., whither his government sent him in 1940. If their plans materialize, with time and care this city will rise again, like Phoenix, from its blood and ashes. The counsel, understanding, guidance, and protection of the United States will be needed; as my No. 1 Filipino

boy, at my quarters, remarked when I asked whether he would like to return with me to America — 'It is my mother country.' So, *en avant*, to Tokyo — and the 1946 reunion — D. V."

Walt Binger resigned on June 1 as commissioner of Borough Works of the Borough of Manhattan to become vice-president of the City Investing Company at 30 Broad Street, New York City. In his new connection Walt will "have entire charge of the company's postwar building program, which is expected to include at least one office building, four apartment houses, and several theaters." — James B. Hobbs writes that he is now located at Exeter, N.H., where he is teaching mathematics at the Phillips Exeter Academy. — Tom Berrigan breaks into print again in the Worcester *Telegram* of May 20 in an article which states that Governor Tobin of Massachusetts will very likely nominate Tom Berrigan to the vacant position of chairman of the Metropolitan District Commission.

Willard C. Brown, a retired captain in the Naval Reserve, whose address is now the Union League Club of Chicago, writes in regard to his war service as follows: "I was late in being called to active duty, on account of being president of the Illuminating Engineering Society, which was playing such a large part in the specifying of lighting requirements for the new war plants that were being built everywhere. I finished my term in October, 1942, and in November, 1942, went on active duty as officer of the commodity purchase branch of the Bureau of Supplies and Accounts. I built up that largest of all buying organizations ($7,000,000,000 this fiscal year) from a handful to 150-odd specialist officers, drawn from industry — ranking men from just about every field you can think of. Incidentally, I saw Hen Shepard occasionally while he was active, also, of course, Joe Barker.

"In March, I transferred to Chicago and was given a spot promotion to the rank of captain. I am officer-in-charge of the Navy Purchasing Office at 844 North Rush Street, Chicago — one of our four major field offices. I live in the Union League Club and am very busy keeping the pipe line of supplies full; now it's the one that is pointed at Japan. I relieved a 'regular' captain who has gone to the far places where his many years of Navy experience will be useful. So a 'retread' fits in to the necessary, sometimes hectic, and ungallant work of the war. Incidentally, I sat for two years on the Navy's Patent Royalty Revision Board, administering Public Law 768."

Dick Knowland has resigned from the Bigelow-Sanford Carpet Company and is occupied with industrial engineering consulting work. His home address is Goshen, Mass., although at present he is residing at the Pelham-Biltmore, in Pelham Manor, N.Y. He writes as follows: "With respect to news about the family, doubtless I have been among the more silent members of the Class. Since graduation, however, I have succeeded in being married and raising three boys, their mother being the former Katharine Graham of Boston. The oldest boy broke his back while training in the Naval Air Force but is now coming along very nicely. The middle prodigy is in the dental school at Pennsylvania; while the third is struggling along at Williston Academy with reasonable success. For the record, the respective names are Bill, Andy, and Dick."

As I write these class notes for The Review, I am mindful of the fact that four years ago at this time I was making my plans for leaving in a few days for our 25th reunion at the Oyster Harbors Club. It is time that some thought be given to our 30th reunion which will take place about a year from now. The way international affairs are going, it should be possible to hold the reunion, and it should be a very real one for Dave Patten and others who have wandered to the far corners of this earth. Mark your calendar now to reserve time for our 30th reunion late in May or early in June of 1946. — James A. Burbank, *Secretary*, The Travelers Insurance Company, Hartford, Conn. Steven R. Berke, *Associate Secretary*, Berke-Moore Company, Inc., 11 Boylston Street, Brookline 46, Mass.

1917

At a meeting of the Technology Club of Philadelphia, which I was glad to attend, Ralph Ross told me that he is still with the telephone company. He is glorying in the fact that three of his daughters were married during the past year, making a total of four married. He already has two grandchildren, which may or may not be welcome news to his contemporaries. Chester Allen was also at the meeting. He is with the Securities and Exchange Commission, which has a principal office in Philadelphia. On the same trip I attended a meeting of the New York area graduates of Course XV. Dick Loengard was the only other 1917 man present, and after the meeting we had a brief get-together.

Walter G. Farr of Congoleum-Nairn has recently undergone an operation but is now reported to be well on the road to recovery. Dean Lobdell was in his area for a meeting of the New Jersey regional scholarship committee, but as he had to meet some 35 candidates in the afternoon and evening, he was unable to look in on the patient as he had intended. — A letter regarding Frank Small has come to our attention. His cousin writes that he and his wife and daughter were liberated from Los Banos prison camp after having been interned in Santo Tomas as well. Frank had previously been working in the Philippines for a mining company. — The Alumni Office has received word that Colonel Edwin F. Barry, who was formerly at the Watertown Arsenal in the Ordnance Department, died of malaria while a Japanese prisoner on Luzon.

Two address changes may be of interest. Frank E. Peacock is now with Erik Floor and Associates, 139 Clark Street, Chicago; and Austin Kuhns has transferred his headquarters to Farrel-Birmingham Company, Inc., 405 Lexington Avenue, New York. — Hubert Wellcome has adopted a procedure that might have a suggestion for others. We received two cards from him recently — one saying that he had had a pleasant visit with Mr. and Mrs. Dudley Edwards Bell, the other that he had run into Johnny DeBell in Washington, when the latter was about to fly to Paris. — For the first time in many moons I have a letter from John Babbitt, who wrote from his home at 3734 Carrollton Avenue, Indianapolis 5, Ind. He reports on the interesting meetings of the Indiana Association of the M.I.T. His son is about to be graduated in mechanical engineering from Ohio State, and his daughter is already planning on finishing school. John is looking forward to a nautical summer on a Vermont lake. He reports hearing occasionally from Jim Andersen and John Holton. — Raymond Stevens, *Secretary*, 30 Memorial Drive, Cambridge 42, Mass. Philip E. Hulburd, *Assistant Secretary*, Phillips Exeter Academy, Exeter, N.H.

1919

With this last issue of the present volume, we are pleased to say that the 25-year book was very favorably received by the Class, and abstracts from the correspondence form the basis for the notes this month. The contributions from the Class were immediate and sufficient to cover the expenses. Your Secretary, in behalf of the Class, wishes to express appreciation to the committee for their work on the book and to the Class for its excellent support.

Al Richards says: "I was very much impressed with the thorough and very swell piece of work which you did on the 25-year class book. I want to congratulate you, the book committee, and everyone who contributed to the book, on a perfectly marvelous job." Al Richards contributed the 1920 "Technique" to which we attached the original quotations and signatures of the Class at the Norwich Inn Banquet on last July 29, before mailing it to Franklin S. Adams, who was the winner of this excellent remembrance of our 25-year reunion. — Izzy Patterson states, "I had time only to glance at the 25-year book, but it looks swell. The entire Class owes you its thanks for your efforts."

Jack Fleckenstein writes: "Congratulations on this splendid work! Don't you ever get out here to Michigan? I should like to see you if you come this way and want you to plan on spending the week end with us here in Ionia. I understand you are going to take a contract with Leonard Refineries, Inc., at Alma, Mich., for a catalytic cracker, and if this is true, it ought to bring you this way. Alma is only 50 miles from Ionia, and I could drive over and get you if you are up there. You might also get to Detroit, and if so, you can usually reach me at the Detroit Athletic Club in the middle of the week — usually from Tuesday night through Friday night — as I make my headquarters there during the week. Let me hear from you, Gene." — W. Roy Mackay praises the 25-year book as follows: "I have just finished reading with much interest and enjoyment our class book, 'Twenty-five Years After.' The publication committee deserves a vote of appreciation from the Class as a whole for doing such an excellent job, and at this time I should like to send you and the other members of the committee my personal 'thank you.'"

I have a letter from Ark Richards which says: "Thanks for my copy of 'Twenty-Five Years After.' You certainly did a swell job. I don't know where you get the time to do everything you do. There is an old saying that if you want something done quick and right, go to a busy man. Our Class is extremely fortunate in having a fellow like you, able and willing to get behind any worth-while project from which the Class will profit. I am looking

forward to seeing you when next in New York." — Ben Sherman writes: "I trust that you will be successful in meeting the entire expense of putting this book out. I got a big laugh out of the pictures of the boys, including myself, taken 25 or more years ago. I used to think that the old tintypes were funny, but I don't think now that they had anything on the pictures of the boys at the Institute in their stiff collars 25 years ago. The only thing missing from our pictures of that day is a head prop. Many thanks for your share in a job well done." — Johnny Coldwell drops a note — "Nice going on getting out the book."

Walter T. Hall writes: "A few days ago 'Twenty-five Years After' arrived at my desk. I can't tell you how much I enjoyed going through it. Had I entered with the Class of 1919 instead of transferring from another college, and had World War I not interfered with my course, I should probably have got even more pleasure out of it, as the rest of you must have. I have never seen this type of book before and want to compliment you on producing it, as I am satisfied you are the one who deserves the credit. Sometime in the not too distant future, I hope we may have dinner again so as to talk over old times." — H. S. Weymouth writes that the 25-year book is "a very excellent and interesting issue."

George McCarten writes from Detroit: "I have just received 'Twenty-five Years After,' and I certainly think you and those who collaborated with you on this endeavor did an excellent job. I see Ev Doten occasionally and have seen your friend, Dan Mallett, once or twice. Things are pretty quiet here in Detroit over V-E Day; I take it that there was a little more excitement in New York. It was rather interesting in Detroit to watch personal reactions. Most of the people here seemed to think that the job was but half done and that it was a good idea to go to church and report back to work the next morning. This certainly was different from what happened on November 11 in 1918." — Mrs. J. H. Townsend writes: "It is very kind of you to include me on your 1919 mailing list, but I was at Technology only for a three months' course during World War I and have never contributed a thing. My son, a radio technician in the Navy in the Pacific, hopes to go to M.I.T., but that is hardly a connection as yet." — A letter from Duke Herzog states: "I expect to be in New York soon and will call you up and have lunch with you if you have the time. I see a few of the boys out here occasionally, but have been too busy to go to all the luncheons with them. I think you fellows did a swell job on the 25-year book." — J. E. Cassidy writes: "You fellows did a good job. I enjoyed it. Thanks."

George Bond writes from Paulsboro, N.J.: "I was very glad to receive our 25-year book, which certainly is interesting. You fellows did a fine job on it and are to be congratulated. There is nothing much new down this way, but I manage to keep plenty busy. If you get to Marcus Hook any time again, be sure to look me up at the lab. Let's hope the rest of the war will be over soon." — Wirt Kimball has the following to offer: "Congratulations on the book 'Twenty-Five Years After' which you recently had forwarded to me. I immediately lost many hours of sleep that night going through it from cover to cover and have repeated the process several times since then. You and your committee did a great job. It brought back many memories of 25 years ago which had entirely left my mind, including names and faces, and I found myself repeating names aloud as I came across their pictures. You caught the spirit, and the book exceeded my expectation when you explained at the reunion what you planned to do. Let's hope that when the time for the 30th rolls around all the gang who made the 25th will be there and as many more again who missed that for one reason or another. Keep up the good work, and I will see you at the 30th if not before." — Fred Given adds: "I have enjoyed looking through the book immensely in spite of the fact that I knew its contents all along. My family praise it highly as a memorable piece of work. The boys here at Bell Telephone Laboratories also are warm in their praise."

In the May issue of The Review is a letter from Jack Fleckenstein which confirms previous knowledge that Jack is quite a philatelist. He discusses the Collins ships in the United States stamp issue of 1869. — The following changes of address have been received: Aubrey P. Ames' address is 16 Sea Street, Camden, Maine. Richard S. Holmgren has moved from Berkeley, and his new address is San Diego County Water Authority, 314 Union Building, San Diego 1, Calif. Mrs. Murray P. Horwood's address is 8 Craigie Street, Cambridge 38, Mass. E. Russell Hubbard has moved from Teaneck, N.J., to Millstone Road, Wilton, Conn. Ernie Voss is in Germany for the government on petroleum problems.

With this last issue for the current year, your Secretary takes the opportunity to thank the Class again for its wonderful co-operation in support of class activities. See you again in November. — EUGENE R. SMOLEY, *Secretary*, The Lummus Company, 420 Lexington Avenue, New York, N.Y. ALAN G. RICHARDS, *Assistant Secretary*, Dewey and Almy Chemical Company, 62 Whittemore Avenue, Cambridge 40, Mass.

1920

It is a pleasure to report further evidence of interest and support in our 25th year, although returns from my second letter to the Class have not started to come in. As you would of course expect, I received a hearty response from Chuck Reed, and he may be in Boston in time to be with us at the Ocean House and the Alumni Banquet. Chuck's older son is being graduated from the Institute at that time. He is one of the V-12 boys. Chuck says he rarely sees anyone from 1920, although Monroe Shakespeare used to pass through Cleveland at frequent intervals. Monroe is still at Kalamazoo. Chuck says Monroe has become quite a student in taxation problems and has published some excellent material on the subject. He would be glad to hear from anyone who is interested in this important subject. Chuck has been active in the M.I.T. Association of Cleveland and presided at a meeting in May at which the noted author, Louis Bromfield, was the speaker. Chuck says, "Please give my best regards to any of the gang whom you happen to see."

Chick Dana has contributed generously to the class treasury and writes that our decision to postpone the big reunion seems wise to him, and he hopes some day we may have a delayed reunion at which we can celebrate without reservation. He has been in Cincinnati on some work for the War Department, but his headquarters remain at 2 Broadway, New York. Chick says he started a small war baby effort in 1942 as a side issue and found it running away with him before he got through. He says his work for the War Department has been the equivalent in business experience of 20 years at his former pace.

Jim Wolfson writes that after 25 years he feels it is time to comply with my request for some personal news. He has been continuously associated with the construction industry and has spent a good deal of time in Cleveland for the past year in connection with the construction of 980 single family homes. He is also moving 670 government houses from Niagara Falls, N.Y., to Eudora, Kansas, and is building some 40 garden apartments in the city of Baltimore. Jim is with the Euclid Construction Company, Euclid, Ohio. He says that last winter he called at Fred Zurwelle's office in Miami, Fla., and thinks that Fred made a wise choice in settling there. Jim has three sons, aged 15, 13, and 10, all of whom he says would like to be engineers because it must be swell to travel around like their dad. As far as he is concerned, he would much prefer not to see the inside of a train or plane for some time and would like to be able to enjoy his family and his Long Island home at 342 Beach 142d Street, Neponsit, L.I.

Phil Rust writes from Wilmington, Del., where he is with LaFloresta Perdida, Inc., a lumber and naval stores company, in the Delaware Trust Building. Phil says, "Indeed we are all looking forward to the 25th reunion, belated though it may be." — Ted Hobson writes from 44 West Kelso Road, Columbus 2, Ohio, and says he envies the fact that some of us are in Boston. He is working for the Curtiss-Wright Corporation and has a son in the Marines fighting on Okinawa. He sends best wishes to everybody.

A V-mail letter comes from Fraser Moffat, a lieutenant colonel, who is in Europe, having been on military leave since 1941 from his job as vice-president of United States Industrial Chemicals. Fred says he has had an interesting time for the last four years running alcohol for the War Production Board, commanding an island in the Gulf of Mexico, commanding a depot in England, commanding a smoke generator battalion, being on the military government team for Bavaria, and now trying to get some chemical production out of Europe to save the Army the necessity for cluttering up ships with such things. Fraser says he must say that the life in Paris, where he has been for a month, is utterly luxurious after seven months in the mud, with occasional unpleasantness from an easterly direction. He admits, however, that it would be even nicer to share a party with us back home and is wondering when his ship will be ready. He sends best regards to the Class.

Florence Fogler Buckland writes from Schenectady that she is counting on us to go ahead with the plans for the big reunion as soon as conditions permit. She says she is

still working like mad at the General Electric Company, principally with heat-transfer problems and fluid-flow. She says it is very amusing to her to see how she can take hold and deal with rather intricate matters after 15 years of vegetating and playing bridge. She says that at G.E. she has an opportunity to tackle heat-transfer problems ranging from —422 degrees F. to 2,500 degrees C., in sizes from a few ounces to 20,000 pounds; and she is trifling with such things as free convection, radiation, conduction, forced convection, separately or in combination, transient or steady, very hot, medium hot, and a little on the chilly side. Says Florence, "From time to time a cosh pops up, and I take it in my stride, although at M.I.T. I didn't have even a bowing acquaintance with hyperbolic functions."

K. B. White, still in his interesting abode at 1300 Manhattan Avenue, Union City, N.J., writes that he is pleased to state that since he was last heard from there have been no events of sufficient importance to provoke a letter. He is still running his own management consulting business (very successfully, we judge) and he doesn't look for any letup until VE plus X day, his letter being dated April 25. K. B. says he hopes to avoid any depression as successfully as he did the last one, and as pleasantly, by going back to Paris. You will pardon me if I cannot refrain from quoting his last paragraph. He says, "I am sure that we are all indebted to you for the way in which you keep plugging away at your relatively thankless job of being permanent Class Secretary," — Ed Bragg says, "Since last writing, some years back, I moved from Scarsdale, N.Y., to Greenwich, Conn. I have a son in the Brunswick School here in Greenwich who may yet become an M.I.T. man, say Class of 1953."

Ray Reese writes that he was touched by my appeal as he has been in similar circumstances with the local Alumni Association at Toledo, Ohio, where he is a consulting engineer; address, 300 Sandusky Street. Don Ferris, at 736 Chicago Boulevard, Detroit, reports that he and several other M.I.T. men are with the Budd Wheel Company. Don confesses that he is still a bachelor. He wishes us well for whatever reunion may be possible. Ernie Whitehead of 464 Salisbury Street, Worcester, writes that his oldest son, Donald, is being graduated in June and admits that the boy has made an improvement on his own record, having been on the Dean's list since he entered and elected to Tau Beta Pi. Ernie expects to attend Class Day and to see us at the Alumni Dinner. Herb Fales has been elected director of the International Nickel Company, of which he is vice-president. He has been with International Nickel since 1922, was assistant to the general manager at the Huntington, W. Va., works and later was transferred to the operating department at the New York office. From 1928 to 1930 he was an industrial engineer with Du Pont, returning to International Nickel as assistant to the vice-president and becoming vice-president in 1935. — A. H. Castor, an Army major, is back in this country and is at 91 Bay Street, Manchester, N.H. E. L. Cochrane has been promoted from the rank of rear admiral to that of vice admiral, and his address is 3110 33d Place, Northwest, Washington, D.C.

To those of you who have already sent in their F Bond for the 25-year class gift, I speak for the Class and the Institute when I tell you that your prompt response is deeply appreciated. The proportion at present is very small, but I am hoping that we shall have a favorable report at the Alumni Banquet. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

1921

At this writing, the new Fund is well under way and bids fair to be another record breaker. As in the past, new names appear to swell the list of those who regularly meet with us here. If you haven't already done so, mail that check now to be sure your Review subscription is continued. With our silver anniversary year coming up, you'll want the story every month on reunion plans — and please make the amount extra large so we can top the goal of $15 a man. — Ray St. Laurent has prevailed on Dan Harvey to head the reunion again. Dan is back in the eastern area whence he directed two previous parties, and he promises that the Terrific Twenty-fifth will be just that. The place for our meeting, arranged by Ray four years ago, is the finest spot on the Atlantic coast. Details will be announced on these pages when The Review resumes publication in the fall.

Howard F. MacMillin, II, former President of the Hydraulic Press Manufacturing Company of Mount Gilead, Ohio, has been elected president of the H.P.M. Development Corporation, a subsidiary of the manufacturing organization. Howard will devote his attention to the research and prospective peacetime operations of the two plants in Mount Gilead and the third unit in Wheeling, W.Va. — Henry R. Kurth, VI, writes that his two boys are both in service. Don, the younger boy, is in training in Memphis as a naval air crewman. Malcolm has been in the thick of the war for some time. He left Technology with the rest of the Army Specialized Training Program boys in the middle of his freshman year and completed the work of the Chemical Warfare School but was deprived of a rating when the program was curtailed. He was transferred to a longshoreman's unit in Louisiana, then back to the A.S.T.P. at Rutgers, then to Colorado for field training. He wound up as a patrol scout with the Timberwolves, an infantry division of the First Army. He has been in Europe since last fall. He was wounded in action in Germany in October and was hospitalized in France until the first of this year. He returned to action and was in the lead of the break-through of the First Army in the push towards Cologne. He has a Purple Heart and a Combat Infantry Badge. Chick also has two daughters, Anita, who completed the course at Katherine Gibbs School last year, and Barbara, who is in the second year of high school. Chick further reports on Course VI in Boston: Mel Jenney still running his own patent law office, Bill Kohl with Century Electric, Hank Lane doing a hush-hush job in a Harvard laboratory, and Hartwell Flemming with the New England Gas and Electric Association.

Elections of the M.I.T. Club of Northern New Jersey resulted in Sumner Hayward, X, being made a program vice-president and Fred Kowarsky, X, continuing as treasurer. George Chutter, VI-A, and Max Burckett, VI, are on the executive committee. — Raymond A. St. Laurent, X, writes that his company has changed its firm name, formerly the Rogers Paper Manufacturing Company, to the Rogers Corporation. The materials it manufactures and their uses have been developed far beyond the narrow limits implied by the old name of the organization which was founded in 1832. Present activities include conversion of materials into finished forms as shown in a series of attractive displays which depict Rogers products in telephone handsets, shoe soles, jewel boxes, magnetos, machete handles, and numerous structural parts and electrical insulating components. Ray is vice-president in charge of sales, and Saul M. Silverstein, X, is vice-president in charge of development and research. — Leonard R. Janes, VI, was our luncheon host in Chicago recently. Jimmie is development engineer for the Public Service Company of Northern Illinois, 72 West Adams Street. He makes his home in Evanston, Ill.

We regret to record the death of Clyde L. Chatham, VI-A, on June 7. Clyde had been with Public Service Electric and Gas Company, Newark, N.J., since 1922, when he started as a cadet engineer, and was scheduled for promotion to superintendent of the entire Passaic division of the company on June 16. Born in Pennsylvania in 1901, he prepared for the Institute at Williamsport High School. At Technology, he was a member of the Electrical Engineering Society, Hexalpha and the T.A.C. In 1924, Public Service made him engineer of the Passaic division with headquarters in Paterson, N.J. Two years later he became an engineer in the Newark distribution engineer's office. In 1937 he was appointed assistant distribution engineer, and in 1940 he returned to Paterson as assistant superintendent of electric distribution. Clyde has made his home in Nutley, N.J., for the past 20 years. He married the former Elizabeth Reed and was the father of a daughter, Encie Lou, who is 12. On behalf of the Class, we wish to extend sincerest sympathy to Clyde's family.

Although five members of the Class have returned to civilian status, additions to the list of those in the armed forces have maintained the total at its highest figure of 141 men or 16 per cent of all those who were associated with 1921. Ninety-nine are in the United States Army, 41 in the United States Navy, and one in the United States Maritime Service. Nineteen are in the high command and include four major generals, 13 brigadier generals, one vice admiral, and one rear admiral. Of the Army group, colonels continue most numerous with 29; in the Navy, 13 lieutenant commanders just nose out 12 captains for statistical honors. All branches of the services are represented, including the Chaplain Corps. Nine men have won decorations — two Distinguished Service Medals, one Purple Heart, six awards of the Legion of Merit. One each has been reported killed in action, wounded, disabled in action, missing in action, and died in service. — Nonmilitary address changes are: Albert B. Alsos, XIII, Savannah Machine and Foundry Co., Lathrop Avenue, Savannah, Ga.; Harding DeC. Williams, I, Creole Petroleum Corporation, Caripito, Venezuela, S.A. Mili-

tary personnel can be reached by addressing them in care of the Alumni Association at Cambridge.

With the close of another volume of The Review, we shall rest from these labors for three months. A pleasant summer to those of you hereabouts; may you others beyond the seas speed Victory and a safe return. Your Assistant Secretary addresses a plea to you all for letters, a photograph, and a complete life history for our reunion Class Book. — RAYMOND A. ST. LAURENT, *Secretary*, Rogers Corporation, Manchester, Conn. CAROLE A. CLARKE, *Assistant Secretary*, Federal Telephone and Radio Corporation, 591 Broad Street, Newark 1, N.J.

1922

Whit Ferguson stayed around long enough to pinch-hit for the Secretary by writing the notes for the May Review. Shortly thereafter, he departed for parts unknown on important work for the War Department. He hopes to be back in Buffalo by the middle of the summer. H. O. Berry, Assistant Vice-president of the Florence Stove Company in Gardner, Mass., is currently head of the Gardner Committee for Economic Development, for which post he is splendidly qualified as the result of several years of activity in the Chamber of Commerce, including the presidency of that organization. E. Allan Reinhardt is back in the brokerage business. Formerly with W. E. Burnet and Company, he left them about two years ago and went with Price Waterhouse and Company. On January 1 of this year he returned to W. E. Burnet and Company at 11 Wall Street, New York, as a general partner. One of the big surprises to come out of the war relates to Bill Bainbridge, whose exploits have been previously written up in this column. The New York *Times* on March 22, announced that Captain Bainbridge was married on February 24 "somewhere in France" to Captain Florence Thompson, Army Nurse Corps, of North Sydney, Nova Scotia. Mrs. Bainbridge was stationed at the Robert Brigham Hospital in Boston before she went overseas. Many of us had concluded that Bill was impervious to feminine charm, but it is evident that the war can bring about many changes. We wish the "two captains" a long and happy career, and we shall be anxious to find out from Bill at our next reunion which is captain of his household.

Judging from the number of letters received, the Classified Business Index is popular, and there is considerable interest in a more complete edition at a later date. We will keep the data on file for such future use. Contributions to help defray the cost have come in quite generously, but, if it slipped your mind and you haven't sent yours in, don't be bashful, because it helps, and it is never too late. — CLAYTON D. GROVER, *Secretary*, Whitehead Metal Products Company, Inc., 303 West Tenth Street, New York, N.Y. WHITWORTH FERGUSON, *Assistant Secretary*, 333 Ellicott Street, Buffalo 3, N.Y.

1923

The Worcester *Telegram* of May 13 contained the following item. "Raymond P. Harold, president of Worcester Federal Savings and Loan Association, was elected vice-president of the National Savings and Loan League today at the closing session of the league's board of governors. The league is made up of savings and loan associations, cooperative banks and savings institutions from every state in the nation."

P. P. Pratt writes from Larchmont, N.Y., as follows: "I have been in England since early last December and returned only lately to find your postcard of January 15 requesting information. It is true that my change of address indicates a change of status. After serving with the Army for three years, including action with my battalion in North Africa, I was given an opportunity to serve on Mark Clark's staff as an antiaircraft special staff officer, including service in Tunisia, Sicily, and through Italy to the Anzio phase; the importance of army antiaircraft decreased rapidly, however, and such units were converted to infantry, and other types. The senior officers were given the opportunity of going on inactive reserve or assuming administrative jobs with the Allied Control Commission. Quite naturally, I chose the former, as three years away from the job involves losses in promotional opportunities, and so on. Upon returning a year ago, I was appointed to the central engineering department of General Foods at New York, as chief of the economic survey section. This, as you would suspect, is right down the alley of Course XV_2, and I have been employed for the past year with projects in Venezuela, Canada, and England. In England these past five months, I have been setting up an operation to manufacture Grapenuts and Maxwell House Coffee. I am currently engaged with an economic survey considering establishment of a branch Diamond Crystal Salt plant in the East. My son, Cabell Pratt, is attending high school at Mamaroneck, N.Y., and aiming at M.I.T. in two years. My daughter, Sherry Pratt, is in attendance at Larchmont schools and is looking forward to a musical career. Last September in Venezuela I ran into old George Gilman at Caracas. George has a big job there, being in charge of a project to build the University of Venezuela, at a cost of about $30,000,000. He has his family with him and will probably be required for about three years. Aside from a little weight taken on and a domal shine replacing the sparkling red hair, George is just the same as in the old *cum laude* special frosh class in 1920. Twenty-five years, including those at the Institute, have failed to dim his glad smile."

The M.I.T. Club of South Florida started a system of circular letters. One item read as follows: "Mr. Horatio Bond '23 of Boston is chairman of a special committee of M.I.T. Alumni to help local clubs work out some of their problems. He is our own club representative on the Alumni Council, and I am sure all members will agree that this is a grand break for our local group." We all agree with the men from southern Florida, even if Ray is temporarily out of circulation. — HORATIO L. BOND, *Secretary*, 457 Washington Street, Braintree 84, Mass. HOWARD F. RUSSELL, *Assistant Secretary*, Improved Risk Mutuals, 60 John Street, New York 7, N.Y.

1925

In an otherwise routine sheaf of address changes was included, over the date of April 10, a new address for Francis M. Corliss, VI; the unusual feature was a note in the memo space: "Mr. Corliss was a prisoner of the Japanese and has been released but is not in this country yet." The old address was Manila, P.I., and the new (mailing) address, that of his sister, Mrs. R. N. Mead, 75 Bennett Street, Brighton 35, Mass. You can well imagine the joy and renewed hope which this simple statement implies. For our part, we hope that Frank's imprisonment has not affected his health, and that he will soon be back home again, if he is not already here.

As a sequel to the recent account of Glen Bateman's capture by the ELAS forces in Greece, comes the following note from Glen himself, quoted from a letter to Dean Lobdell: "I have just been released from the South African Air Force and have returned to my normal duties in the office. . . . My last assignment before reverting from lieutenant colonel to plain John Citizen was to be attached to Royal Air Force headquarters in Greece, where I had the misfortune to be taken prisoner by ELAS and spent five weeks in their not so charming company touring central and southern Greece. Fortunately for all of us, an exchange of prisoners was finally arranged for, and we got back to Athens on February 27." I have written to Glen, congratulating him on the successful conclusion of his military service, and suggesting that, if he could find the time, he might send us more details on his activities during the last six years. If he will do this, we shall have some extremely interesting material for these notes.

I have a copy of a letter from Chet Trask, written from Germany a few days before the cessation of hostilities. He says: "I was mighty glad to get your long letter with so much news in it . . . and envy you your nice home and garden. I don't stay long enough in one place to have a chance even to *see* a garden. Although things are going well, I am very sorry that I shall not be at the 20-year reunion. I have gone through France, Belgium, a small section of Holland, and am now getting pretty near the Russians in Germany. So it won't be long before we start for the Pacific to finish up there. I have for some time been executive officer of an Engineers general service regiment with attached units making our total a large outfit. So am busy enough to suit even me."

Also at hand is a news release from the public relations office of the Army Air Forces at Randolph Field, Texas, from which the following excerpts are taken: "Promotion of Brigadier General Walter F. Kraus, commanding general of the Army Air Forces Central Flying Training Command headquartered at Randolph Field, to the rank of major general was announced by the War Department (with no date, but evidently in April). The new major general, whose 27-year Army career includes service in the Corps of Engineers and Field Artillery prior to his entry into the air forces in 1920, has directed the 11-state program of the Central Flying Training Command since May, 1944. . . . General Kraus became chief of staff for Lieutenant General Barton K. Yount, commanding general of the A.A.F. Training Command, in January, 1942, and retained that position until he was assigned to command C.F.T.C. Rated as a command pilot and combat ob-

server, he has served 24 of his 27 years of uninterrupted military service in the air forces. A 1915 engineering graduate of Columbia University, General Kraus received a reserve commission as second lieutenant with the Corps of Engineers early in 1916 and was called to active duty when the United States entered World War I. Commissioned in the Regular Army in 1917, he was assigned to the Artillery, and in 1918 he was given command of Battery B, 37th regiment artillery, and was bound for France when his transport was ordered back upon cessation of hostilities. Detailed to the air service in 1920, General Kraus entered pilot training at March Field, Calif., as a first lieutenant, and won his wings at Post Field, Okla., in 1921. Successively, he was assigned to Kelly Field, McCook Field, Dayton, Ohio, and to . . . Technology. . . . General Kraus headed a group of 17 officers on a special observation trip to the United Kingdom in the summer of 1943 to collect combat data and information upon which to base recommendations for changes and revisions in the A.A.F. training program."

From the Wilmington, Del., *News* for April 5 comes the following information: "Ray N. Wheelock, II, plant engineer of the Hercules Powder Company's Sunflower Ordnance Works, Lawrence, Kan., has been appointed assistant chief engineer of the company's engineering department. . . . He joined Hercules in 1925 as maintenance engineer at Kenvil, N.J., and in 1926, was transferred to the explosives plant at Carthage, Mo., in the same capacity. . . . In 1942 he was named manager of Missouri Ordnance Works. A graduate of . . . Technology, he served in World War I, with the 101st Field Artillery, from April 11, 1917, to April 8, 1918, when he was wounded in action. He is married to the former Marion Edith Smiley and has one daughter."

This concludes the notes for this volume of The Review. I hope to be able to supply notes for every issue in the next volume, but that will depend on whether you fellows supply the news. Even one or two good letters a month spice up the notes considerably. I have no fault to find with clippings and news releases, which are faithfully forwarded to me by the Review office, but firsthand stuff is what we want. Let's go! — Hollis F. Ware, *General Secretary*, P.O. Box 52, Godfrey, Ill. F. Leroy Foster, *Assistant Secretary*, Room 5-105, M.I.T., Cambridge 39, Mass.

1926

From Walter H. Ridley '28 of the Foxboro Company, Foxboro, Mass., comes an announcement of the marriage of John L. Ostborg to Inez Sharrard of Troy, N.Y., on April 1. The home address of Mr. and Mrs. Ostborg is Redmond Road, R.F.D. 6, Springfield, Ohio.

Wilfred E. Carter, who in recent years has been with the War Manpower Commission in Boston, in charge of training programs, called by the Secretary's office to inquire about various members of the Class. He lives in Wellesley Hills. — By V Mail from Bob Dean comes word that he is in Germany and that he was engaged in three major battles, "the Ardennes, which was all that *Time* said it was and scared us good and proper; Colmar Pocket, which was tricky; and the Rhine crossing — Ruhr operation, where we fought best." Bob has a son entering Technology this summer.

Elmer Warren wrote recently from the Ashburn General Hospital at McKinney, Texas, where he has been obtaining treatment for arthritis. He is a major in the Air Forces. He reports having seen LeBaron Colt some time ago when Colt was being processed at Atlantic City. Apparently he was sent right back overseas. — James R. Killian, Jr., *General Secretary*, Room 3-208, M.I.T., Cambridge 39, Mass.

1927

The Newark, N.J., *News* and other papers recently carried the following with reference to Bud Fisher's recent promotion: "H. W. Fisher of Cranford, manager of the Chemical Products Division of Standard Oil Co. of New Jersey, has been elected a director of the company. . . . The Chemical Products Division was organized with Fisher as manager in 1936 and has expanded rapidly in production of synthetic rubber, alcohol, and special lubricating oils. Fisher started as a chemical engineer with the Standard Oil Co. of Louisiana in Baton Rouge. His work on the hydrogeneration of oil and coal continued through construction of the Bayway refineries and he became assistant director of the Esso laboratories at Bayway."

The press also carried news of the promotion of Lee McCanne, which is quoted in part as follows: "As part of a program of company-wide promotions, Lee McCanne, M.I.T. '27, was named vice-president and general manager of the Stromberg-Carlson Company of Rochester, N.Y. by the board of directors at its annual organization meeting held last week. The new vice-president and general manager held leading positions in the engineering and sales division of the company until his appointment as assistant general manager in 1940. In addition to holding the post of regional director of the National Federation of Sales Executives, Mr. McCanne is a leading member of a number of national and local scientific and civic organizations. He has made numerous platform appearances throughout the nation in connection with his part in inaugurating the famed Rochester 'Sales-Clinics.'"

Excerpt from notes on the Alumni Council meeting of March 26 at Walker Memorial: "A rather special guest from a long distance was Arturo Marqués, introduced by President Ray Stevens. Mr. Marqués is secretary-treasurer of the M.I.T. Club of Uruguay at Montevideo. He was in the United States on business and, most fortunately, in Boston on that week end. He and three of his classmates, Dike Arnold, Ezra Stevens, and Alf Berle, were seated at the head table. Mr. Marqués made a fitting response and invited members of the Class and of the Alumni Council to visit the M.I.T. Club of Uruguay (easily located by inquiry at the United States Embassy in Montevideo), where he promised them plenty of beefsteak and other attractions."

Carlton Davies sends news of himself in a recent letter: "I have been planning a change in business and residence address, and until I had worked out all details, I have refrained from writing. You might make a note that I can be reached at 150 East Bay, Charleston, S.C. My mailing address will be Box 901, Charleston, S.C. From my letterhead, and using the powers of deduction instilled at the Institute, you will note that I am engaged in the wholesale lumber business. In other words, I don't operate a yard, but buy and sell lumber in wholesale quantities. You exist in this business through the kind indulgence of your banker and friends, and as all have been kind to me, I manage to chisel out a living. Ever since graduation, I have engaged in some form of the lumber business and find it hard to leave, although I understand other fields are more fertile. I haven't been in New York for some years because I've been located in Mobile. I hope, however, to get up that way when travel becomes easier. At that time I'd like to see you and exhibit my graying and thinning hair."

From the Pacific front, we have recent word from Steam Harrison, a lieutenant commander in the Seabees. He says, in part: "This is a very rugged deal out here, and 'condition red' is very frequent — with lots of excitement. Since coming here, we have been building roads and docks out of pontoons and improving beaches. All without plans, specifications, and inspectors — a situation that relieves the mind so that one can concentrate on getting the job done in a hurry. Of course, we have to build camps, Baily bridges, and such stuff, and help out the poor helpless Army Engineers into the bargain. We use oil barrels for almost everything imaginable. I have come to believe that an oil barrel is, next to a bulldozer, the most useful invention of this war. Some day I will tell you all we have used them for, from dispensary sinks to culverts to roofing the stoves! I am the executive and operations officer of this battalion — mostly from the midwestern and northeastern United States and really a very capable bunch. I was with the Metropolitan District Water Supply Commission of Boston from 1930 to 1940 and then with Merritt-Chapman and Scott and Fuller Company before joining the Seabees in January, 1942. I have a wife and one girl and so far have made out fine, although I'm not exactly rich."

George W. Brady now resides at 41 Elston Road, Upper Montclair, N.J. News of his recent activities and some interesting views are described by him in the following note to your Secretary: "I came down from Buffalo in 1938 as chief engineer with the then newly formed propeller division of Curtiss-Wright Corporation. The war has required a tremendous expansion, of course, in our activities, both production and development. In spite of the long hours and high pressure scheduled, the past few years have been most interesting, and I hope that in the postwar years we shall be able to continue work on a lot of interesting projects. I feel that aircraft propellers will continue in spite of all the current talk about turbo-jet propulsion. The latter has its place but, like the helicopter, it is now being promoted beyond its present potentialities."

E. Robert de Luccia, a former Engineers lieutenant colonel, is now chief of the new Bureau of Power of the Federal Power Commission. He was in Course I and apparently was with the Federal Power Commission prior to the war. Russell H. Brown is in the Marianas, but his exact address is

unknown. George R. Taminosian, a captain in the Army Air Forces, is now in Ward 23 in the Percy Jones General and Convalescent Hospital in Battle Creek, Mich. So long, until next fall. — JOSEPH S. HARRIS, *General Secretary*, Shell Oil Company, Inc., 50 West 50th Street, New York, N.Y. DWIGHT C. ARNOLD, *Assistant Secretary*, Stevens-Arnold Company, Inc., 22 Elkins Street, South Boston 27, Mass.

1930

Howie Gardner was the week-end guest of the Starratts recently. John Sherman and his wife came over for dinner that Saturday night, so we heard a lot of news concerning the Course X boys in general and the Rochester delegation in particular. Howie is teaching and doing special research at the Institute while on temporary leave of absence from the University of Rochester. He expects to return there this summer. Tony Savina is in the research lab of American Cyanamid and Chemical Company in Stamford. Paul Hahn holds a professorship at Vanderbilt medical school. Gordon Lister and Joe Devorss are both in New York City, Gordon doing war research patent work and Joe working with United States Rubber on shock mountings. Joe recently described his work on one of the United States Rubber broadcasts. Ralph Peters is with Kodak in Oak Ridge, Tenn. At Rochester, Greg Smith, Johnny Rogers, Stan Wells, and Dick Wilson are all Kodak men. Some of them are pretty good at square dancing, we understand. Dick runs a small farm in his spare time, with a tractor and all of the other equipment. Dick and Herm Botzow ought to team up. Ed Nolan has been advanced to the position of assistant to the director of manufacturing for Merck and Company. For the last two years Ed managed the Stonewall plant in Elkton, Va.

Although these notes conclude the present volume of The Review, your Secretary will be glad to receive news during the summer and fall. It's welcome at any time! The Class should be pleased with the showing made in the last Alumni Fund report, where we again beat '29 and '31. Before we do any crowing, though, let's look at the record! The Class of 1933 averaged 58 per cent more money per contributor than 1930. Those youngsters were freshmen when we were seniors. 1927 and 1928 both licked us, but not so badly as 1933 did. Of course these notes don't reach the noncontributors, and it is Phil Holt's job to heckle them, but those of us who can and do contribute should see what can be done about that rather awkward 1930–1933 relationship. The results published a year from now will show how we met the challenge! — Best wishes for a pleasant summer, and again may I ask you to send along any class news items? — PARKER H. STARRATT, *General Secretary*, 1 Bradley Park Drive, Hingham, Mass.

1932

Rolf Eliassen has come through with a fine letter, which is quoted below. A few more like this would certainly improve our news. Send them in at any time before the 20th of September or following months. Rolf says: "There has been such a dearth of information from our Class that someone has got to break the ice and start the ball rolling. Some months ago we read in The Review of the death of one of our classmates, Edward S. Allee, XVI. Ed was a full colonel in the Regular Army at the time of his death in a plane crash in May, 1944. He entered the Army as a flying cadet immediately after graduation. He was commissioned a second lieutenant in the Regular Army on June 12, 1935, and was promoted to first lieutenant in June, 1938, to captain in September, 1940, to major in April, 1942, to lieutenant colonel in October, 1943, and to full colonel on January 31, 1944. Radar played a big part in Ed's Army career. He rendered distinguished service at the Army Air Forces' communication school from its inception at Scott Field, Ill., in December, 1941. At various times he served the school as director of flying training, director of the academic department, and director of training. He returned to Technology for the special radar course in 1942 and 1943. For his services to the Army, he was posthumously awarded the Legion of Merit. The citation accompanying the Legion of Merit stated, in part, that it was awarded, 'For exceptionally meritorious service in the performance of outstanding service in helping to establish the Army Air Forces Training School for advanced communications in December, 1941, and his substantial contribution to the success of the B-29 program in outlining a course of instruction for Communications Mechanics. Due to his outstanding technical skill, enthusiasm, and effort, Colonel Allee successfully produced the communications mechanics needed for the B-29 program, and through these efforts contributed substantially to the success of the B-29 program, communications-wise.' Ed's wife and three children are now living at the Ogden Arsenal, where Mrs. Allee's father, Colonel W. A. Capron, is the commanding officer. I have had a chance to go up to Ogden from Salt Lake City to see them. Mrs. Allee would enjoy hearing from some of Ed's old friends and classmates. I know that we are all proud to have had a classmate with such a distinguished career and deeply sympathetic for his untimely death.

"Not much news seems to be in circulation about the Course I fellows. Stuart D. Miller, a captain, when last heard from was stationed with the Ordnance Department somewhere in England. Al Reidell, also a captain, was stationed for two years or so with the Sanitary Corps at Camp Haan, California. We had some pleasant get-togethers at Camp Haan and March Field a number of times last summer. He is now stationed at a Chemical Warfare Service plant near Terre Haute, Ind. Zeke Boling is now the owner of Cecil Boling Company at 415 Lexington Avenue, New York 17, N.Y. They are specializing in heat transfer equipment for refrigeration and air conditioning. Design for government projects has occupied him almost exclusively over the last few years. When last heard from, Minot Bridgham was a major in the Corps of Engineers, stationed in the South Pacific. I used to run into two Course I men from the Class of 1933, Ingald Madsen and Ed Lloyd. Madsen is now a lieutenant colonel in the Corps of Engineers, serving as executive officer of an engineer regiment in the South Pacific. Lloyd is a captain in the Corps of Engineers, assigned to the Office of the Chief of Engineers in Washington on the operation of heating plants at Army posts all over the country. For the past year I have been assigned to the Ninth Service Command Engineer as major, Corps of Engineers, and chief of the Sanitary Engineering Section. We take charge of the operation of water supplies and sewage treatment facilities, as well as refuse disposal and insect and rodent control activities, at Army posts in the eight western states lying between the Rocky Mountains and the Pacific coast. Our activities are increasing greatly now that the big push is on in the Pacific, and our posts are acting as jumping-off points. I should be glad to hear from any of our other Course I classmates and may be reached at Box 2626, Fort Douglas, Utah."

Clarence Lee Woods is now general manager of the Inca Mining and Development Company, with residence at the Santa Domingo mine, via Tirapata, Peru. — Myron Williams of Miami, Fla., has been promoted to the rank of lieutenant colonel and is communications officer for the Fifth Army in Italy. He has also been awarded the Bronze Star. His complete address is Headquarters Fifth Army, Signal Service, A.P.O. 464, care of Postmaster, New York, N.Y. — CLARENCE M. CHASE, JR., *General Secretary*, 1207 West 7th Street, Plainfield, N.J. *Assistant Secretaries:* Carroll L. Wilson, 1530 P Street, Northwest, Washington, D.C.; WILLIAM A. KIRKPATRICK, Allied Paper Mills, Kalamazoo, Mich.

1933

Life began at 9:00 A.M. on April 20 for Helene Elsbeth Henning, according to word received by your Assistant Secretary, who assumes temporary authorship of the class notes and joins with the entire Class in sending congratulations to George and Lucy — may their tribe increase. We have just received word, too, of the engagement of Frances Porter of Freeport, Maine, to John Long, who, you will recall, received his master's degree in 1933. John is currently vice-president and general manager of Photoswitch, Inc., in Cambridge.

Earlier this spring, several of the Class were pleasantly surprised by a visit from Niazi Mostafa, assistant general manager of the Misr Car Company of Egypt and father of three youngsters. Niazi is importer and distributor of a variety of equipment, including radios and refrigerators and is looking toward greatly expanded postwar trade. Herman Shea has fully recovered from his long illness of two years ago and is currently teaching surveying and allied subjects at the Institute, as assistant professor of civil engineering. Quimby Duntley, associate of Professor Hardy '18 in the Color Measurements Laboratory is assistant professor of physics and spends part of his time lecturing to the whole sophomore class in 8·04. Ed Winkler is a member of the staff of one of Technology's largest war research projects. Morris Cohen is firmly established as associate professor in metallurgy. Bill Barbour, now a major, turns up frequently, looking over the research projects he is following with characteristic thoroughness. Francis MacDuff, a lieutenant colonel, has been stationed at the Institute for some time and holds a key position on one of the war projects.

Don Fink, sometime editor of *Electronics*,

has spent considerable time at Technology intermittently, on his various assignments from the Secretary of War's Office, and always looks well despite his unusually busy life. Ivan Getting, equally busy, keeps in trim by working day and night on one of our scientific projects. Lincoln Ryder, an Army captain, had a tour of duty with the Technology Reserve Officers' Training Corps and left last fall for a similar post in Maine. Bill Brown, an assistant professor in Architecture, is on leave with the Navy and is now a lieutenant. Beau Bender has been spending part of his time for the last year as an instructor in Architecture. Our Class Agent, Lou Flanders, is in fine fettle; his general condition is due in large measure to the showing made by our Class in the Alumni Fund drive for the year just ended. Lou's wife, the other working member of the team, deserves much credit for the success of the campaign, since she has been Lou's secretary; in addition she has to spend some time with their two youngsters and also serves as organist and director of the choir at a church in Dedham.

Al Garnell, recently working with the United States Engineers building airfields and such, called the other day asking for help in finding a carload of lumber to provide grist for his newly organized general Wood and Metal Products Company in Providence. Oddly enough, he succeeded in finding it in Boston. Al reports that Bob Forbes, XV, is also with the United States Engineers. Seen lately around Boston: Dick Morse, President of National Research Corporation (see *Fortune*, *Saturday Evening Post*, *Harper's*, and so forth); Rog Congdon, business manager of Doelcam in Newton; Westy Westaway, representing Ingersoll-Rand in Boston; Sam Prescott, formerly with Waterbury Tool and currently with Raytheon Manufacturing Company in Watertown — all looking hale and hearty. The door is open in the office of your Assistant Secretary to any classmates who get to Boston. If you cannot come for a visit, at least you can write. — George Henning, Jr., *General Secretary*, Belmont Smelting and Refining Works, Inc., 330 Belmont Avenue, Brooklyn, N.Y. Robert M. Kimball, *Assistant Secretary*, Room 3-208, M.I.T., Cambridge 39, Mass.

1936

Imagine my surprise last week when I answered my office telephone one morning and found El Koontz's voice coming from the receiver. He was only passing through Buffalo on his way to New York for a short vacation and had got off the train while it stopped a few moments to water its engine, or some such thing. He reminded me that he had written me a letter last February, and then I had to explain to him that at about the end of February I managed to catch a case of pneumonia which kept me out of circulation for 11 weeks and his letter out of these columns. Incidentally, my being sick had one good effect because I heard indirectly from Jim Craig. It seems that amongst my unopened mail during that time was a letter from Professor Locke '96, and when he didn't get an answer, he wrote to Craig (who also works for Linde but in the Pittsburgh sales office) to find out whether he knew what had become of me. So Jim inquired when he happened to see John Gaines '26, assistant superintendent of our laboratory. John then told me that he had seen Craig, and that is how I happened to get the latest story on his whereabouts. But to get back to my conversation with El Koontz on the telephone. We discussed our coming 10th reunion next year and concluded that the reunion plans would depend upon the transportation situation. Let's hope that such gatherings will be permitted next year. At about this point El heard his train whistling for him to come aboard, and our conversation was ended.

Herewith, then, we produce the news of the afore-mentioned letter: "All the items I have were garnered through the mail since the only personal contact I've had with a classmate for several years was a visit with Fletch Thornton last May. Fletch is living in Madison, N.J., and is working in Hoboken as plant engineer for the Franklin Baker division of General Foods. As I understand it, Fletch left Proctor and Gamble at Quincy, Mass., several years ago to take a plant engineering job with a new division of Sperry Gyroscope Company in New England. That plant was strictly a war baby, and when the contract was completed, he moved on to his present job of packing Army K rations, and so forth, which he likes very much. His address is 83 Pomeroy Road, Madison, N.J.

"A letter from Gordon Thomas, who is an Army major, indicates that he is at home for a brief furlough from his duties in the Canal Zone. Gordon married Virginia Hale from Swarthmore, Pa., in Orlando, Fla., about a year ago while on another furlough, and his trip this time was in the nature of a belated honeymoon, part of it spent at Sea Island, Ga. He mentions also that Larry Kanters, a lieutenant colonel, and Art Carota, a major, have also been stationed with him in the Canal Zone, all three of them attached to the staff of the commanding general, I believe in the Coast Artillery. — Brent Lowe, a Navy lieutenant, was recently married in New York to Choral Carlesen of Salt Lake City and is now stationed in Washington. His address is 3314 P Street, N.W. — Harry Essley, a Navy lieutenant, has been stationed in Norfolk, Va., as ordnance engineer in an airplane overhaul shop. He must be still single since his address is Bachelor Officers' Quarters, S. P. 17, Naval Air Station, Norfolk 11, Va. — Scott Rethorst was married in New York on February 23 to Jean Jefferson of Jersey City and Maryland. His bride is a social worker with an A.B. from Wellesley and an A.M. from Columbia University. Scott is associated with the engineering department of the Goodyear Aircraft Corporation, and they are living at 231 Melbourne Avenue, Akron, Ohio.

"C. Donald Brown, who was in our Class freshman year and later transferred to Annapolis, is a lieutenant commander and skipper of his own submarine. His wife and two children live in New London, Conn. — John A. Kleinhans, who also was in our freshman class and transferred to Lehigh, is plant engineer for the J. T. Baker Chemical Company, at Phillipsburg, N.J. Jack lives at Pond Road, Bethlehem R.F.D. 1, Pa. — Gerardo Smith, who started in our Class but dropped back a year, is in Cuba working for his father's tobacco company. He is married to a Baltimore girl, Charlotte Keating, and has a small daughter, Mary Anne, now about a year old.

"I guess that's all the news I have to offer. You see how limited my contacts are and why I look forward to even the slightest item in The Review about our Class. I've been in Minneapolis just four years now as district manager for the Reliance Electric and Engineering Company, engaged primarily in working with Naval Ordnance electrical equipment. I've been mixed up, too, with other applications of electric motor equipment, notably machine tool, shipbuilding, and paper mills. I do get to Cleveland periodically to visit our factory, but so far the opportunity of getting as far East as Buffalo hasn't presented itself. My business address here is 500 Pence Building, and you can be sure, now that I know your address, any additional news items that show up will be promptly forwarded to you."

Thank you, El Koontz, for your newsy letter, and I hope that some of the other boys will take the hint and send in some news items. My address follows. — Anton E. Hittl, *General Secretary*, 530 Norwood Avenue, Buffalo 13, N. Y.

1937

I am very glad to announce that major's oak leaves are blooming on the shoulders of Henry J. Stewart of Canton, Mass., signal officer of the "Hell-on-Wheels Division," whose promotion from the rank of captain came through recently. The major, an electrical engineer, entered the Army shortly before Pearl Harbor and has seen considerable action. His men were experimenting with a Rube Goldbergian elevated, truck-mounted platform for stringing wires through towns somewhere in Germany. According to a report from a staff war correspondent, "Some cynics in the ranks think the device would be more useful for looking into second-story windows than for laying wires." Now that the show is over in Europe, we should expect to see him back in this country for a few weeks.

We on the home front must keep pace with our boys over there; we cannot even think of lying down now; our responsibilities are just as great, if not greater, than before. For the past year we, at Atlantic Diesel, have concentrated on production for the Pacific war. As you can understand, we have been extremely busy during that time on account of the ever changing demands of the fluid, ferocious type of warfare involving us in that theater. My duties are considerably heavier now than ever before, since being vice-president "in charge of manufacturing" includes all previous duties with the addition of several new ones and much more responsibility. We are located in New Brunswick, N.J., and if any of you get to this town, be sure you come to see us and our plant. We have about 700 employees and make all kinds of precision machinery — hydraulics, engine parts, airplane fittings, but strange as it seems, no diesel engines at present. Perhaps later. I expect to break away from the grind in the near future to attend to a few items in near and far cities. I'll try to look up a few of you fellows. — Winthrop A. Johns, *General Secretary*, 34 Mali Drive, North Plainfield, N.J. Philip H. Peters, *Assistant Secretary*, 159 Glen Road, Wellesley Farms 82, Mass.

1939

Recent romances include the engagement of J. Hardoncourt Trepagnier to Edith Patricia Moseley of Wilmington, Del. Dr. Trepagnier is associated with the Du Pont Company at the Jackson Laboratory. Likewise planned for late June, is the wedding of Alex Squire and Isabelle Louise Kerr of Arlington, Mass. Alex is a metallurgist at the Watertown Arsenal. Still another June wedding has for principals William S. Brewster, an Army major, and Lucile Sibley Christmas of Washington D.C. Bill has recently returned to this country after two years in China as a member of General Joseph Stilwell's staff. June scores again with the scheduled marriage of Carl G. Lenk to Dorothy Harrison Carroll, of Nyack, N.Y. Carl, who received his M.S. from the Institute in 1940, is currently working for Du Pont as a chemical engineer.

A press release from General Headquarters in San Francisco tells us that announcement has been made in Luzon in the Philippines of the appointment as corps engineer of John H. Kerkering, of Quincy, Ill., a lieutenant colonel in the Army. It states that he is married, has two sons, John Charles, six, and Kenneth James, three, and that he is a veteran of Guadalcanal, the northern Solomons, New Guinea, and the liberation of Luzon. — STUART PAIGE, *General Secretary*, 88 Van Giesen Street, Richland, Wash. ROBERT C. CASSELMAN, *Assistant Secretary*, 271 Cypress Street, Newton Center 59, Mass.

1940

Ray Keyes, who is now down in Long Beach, Calif., wrote us a newsy letter of what he has been doing the last few years. He says: "I have just completed reading the class notes in the latest Review and in complying with your request, I shall shelve my modesty and relate what I have been doing to help the shipbuilding industry in the Los Angeles harbor area. Since October, 1943, I have been stationed in Long Beach as a marine engineer, working for George G. Sharp, naval architect, designer of the Victory ship and numerous other ship types which are playing important roles in the Pacific. My job is to act as a liaison engineer between my employer's New York office and the shipyards building in accordance with our designs. I am very happy in my position, which has provided an opportunity for me to become acquainted with practically every shipyard in these parts, as well as to do a good deal of cruising on trial trips without having contracted a case of seasickness. The view from our office overlooks the Los Angeles harbor, where we see the ships come and go. The bathing beauties who sun themselves just below our windows are a disconcerting but pleasant distraction. Even with all our advantages, I should still prefer to be in the Bay Area where you are — the million-dollar view from the Berkeley hills is a treat I want to repeat [plug for San Francisco Chamber of Commerce]. My contacts with classmates are practically nil. On a train traveling between Dallas and Los Angeles I did meet a Course XIII buddy, Runyon Colie. Since then I have had to turn to thumbing the pages of 'Technique' again to reacquaint myself with names and faces." Ray then follows with an appeal for more news concerning Course XIII classmates, concluding that the naval architects and marine engineers are all located on desert islands. How about it? What has become of you, DeOlloqui, Kondos, Halstead, Sedgwick, and all the rest?

William R. Stern, an Army captain writes to Ralph T. Jope'28, saying: "You know I left the good old earth of New England a year ago last February, qualifying for my overseas assignment by virtue of certain knowledge gained at courses at Harvard and Tech in the spring of 1943. There followed a very pleasant interlude in Sitka, Alaska, where seasonal sports were indulged in by all, for the inland passage area offers swell skiing, hiking, fishing, photography, and of course no rationing. I knew it was too good to last — of course such a life tends to make one soft, and we have to be on guard for such degenerative tendencies — so in September I found myself here in the balmy Aleutians, where the sun always shines and soft breezes whisper through the tall pines!"

Joseph K. Knight, an Army lieutenant, wrote us by V-Mail that while he was reading The Review the other day, it suddenly dawned on him that he might be one of those recalcitrant Alumni against whom class secretaries are forever inveighing. Joe writes: "Anyway, here's my history for whatever it's worth. I've been in the Army slightly over four years now, first as a private and more recently as a first lieutenant (and there seem to be more of the latter than of the former). After receiving my commission in the Signal Corps, I served as commanding officer of a signal training company at Camp Crowder, Mo., for about a year. I then applied for training in Civil Affairs and had three months of schooling — two at Fort Custer, Mich., and one at Harvard (oops!). After these I passed the early months of 1944 in England, helping to organize and train Civil Affairs companies and detachments. Arriving in France in late July, I spent the rest of the year in active field operations all the way from Cherbourg to Strasbourg, and as far north as Luxembourg. Our work has been decidedly varied but invariably interesting. I wish I could be more specific, but right now it's no dice. At present I am assistant division signal officer — a job which carries more name with it than actual work. It's a novelty, however, to be wearing a garrison cap instead of a helmet."

Boyden H. Hale, an Army captain, writes us an interesting letter also. Bud says, "Unlike many others, my address has been changed again." (Bud should see the some 50-odd changes of address we get regularly every month.) "Shortly before Christmas, I was assigned to a fighter squadron, in China. We are flying P-51's and are giving the Japs quite a time. Evidently they don't like us, for they retaliate with bombing raids which are consistent and regular. The dormitory rooms at the Institute are heaven compared to the quarters we get over here. We're getting by on the food and other conditions in general, but will be mighty glad to get back to the States. If you are wondering how we are doing, the answer is 'Ding-how,' which is Chinese for 'All right.'"

Word comes from George Schneller's mother that George has been overseas for the last year and a half with the Rangers and Commandos. (See The Review for April.) He was wounded on D-Day by mortar shell and was left for dead for four days on a point of land jutting out into the bay of the Seine on the Normandy Coast. The Rangers took seven German long-range guns, but most of George's battalion were lost, only 19 surviving. He was in England in a hospital for a month and had two operations, then returned to the field. George was wounded again in Belgium on September 12 and returned to England, being fortunate enough to leave St. Luke's Hospital in Belgium about two weeks before it was bombed and blown up by the direct hit of a V-2 bomb. On November 29 he was captured wounded and spent some time in a German hospital. He was liberated on the 28th of January and so far as we know is now in France getting along fine. George received the Presidential Citation and three other decorations.

Norman R. Klivans is now a major. Norm is with the Army Air Force Weather Service, which allows him to take frequent trips but, as he says, "at least provides for hot water showers." He now has an A.P.O. number out of San Francisco. — Paul Alberti is still with Chance Vought Aircraft, as far as we know, and Willard Morrison, Jr., is with the West Bend Aluminum Company in charge of the product development and research department. — John P. McEvoy, a major, completed his work with his 22d different division in the early part of this year. The major won't commit himself as to which of the 22 divisions he preferred, but apparently his favorite was the original Ranger battalion with which he fought at Gela in Africa, later at Chiunzi Pass in the Salerno area, and finally at their famous last stand at Cisterna, where the battalion was wiped out when supporting infantry could not get through to them. As reported by the Boston *Globe*, Major McEvoy's battalion was showering the German lines with mortar shells when the Rangers' last message, "They won't get us cheap," came in over the walkie-talkie, and McEvoy's men finally went into the line as infantry to help preserve the toe hold at Anzio. John is one of six surviving officers in the battalion. When they landed in North Africa, there were 38.

Tom Creamer has received some interesting items from several members of the Class in reply to his Alumni Fund letter. George Weinbrenner, now a major in the Air Forces, wrote in that he had not done very much except that he was shot down over Germany on February 22, 1944, and after being missing in action for eight months, finally managed to escape from the Nazis. He then joined, and fought with, the French "Maquis" during the occupation of France and finally came home. He says he is now rapidly growing old and fat while holding down a chair in the Pentagon in the office of Operations Commitments and Requirements for the Air Forces. Sam Rabinowitz reports that he is a captain in the Quartermaster Corps stationed at Fort Devens as utilities officer of the Lovell General and Convalescent Hospital, which he says is the largest Army General Hospital in the United States. Sam writes that he was blessed with twins, Peter Alan and Wendy Anne, in 1944, having married Joy Bridener (Wellesley '41) of Cleveland in 1942.

Bill Kather wrote that he saw Jim Rumsey about a year ago, shortly after his wedding. Bill is at present stationed at Maxwell Field, Alabama, waiting around to be a B-29 pilot. Bill had a second daughter, Diane, born last October. He reports that Jim Rumsey has a fine wife and an excellent job at Du Pont. Both Bill and Jim will be interested to know that Tom Creamer saw Phelps Walker recently in Boston. Phelps was on his way back to his ship after a two weeks' leave with his wife and two-year-old daughter in Maine. Phelps is a lieutenant, junior grade, in the Coast Guard and is very much enjoying his work as engineering officer on an escort vessel now in Atlantic waters. Up to the present time he has been busy training new officers and men. Al Ackerson, a first lieutenant in the Air Forces in the Regional Air Priorities Control Office at the Air Transport Command in Buffalo, also sent in word and hopes to be at the Alumni Reunion in Boston next month. He is at present living in Buffalo with his wife and a daughter born last August. Al reports that he was stationed with Charlie Markham of our Class at Chico Army Air Field in California, where Markham, a captain, is pilot and station weather officer.

Although Alumni Day will be over by the time this is in print, I want to take this opportunity to thank Frank Penn for his fine efforts and work in taking charge of our five-year reunion. I greatly appreciate his doing this. Tom Creamer also sent in word of his recent engagement to Mrs. Janet Waters McCune, Wellesley '39. Tom expects to be married in September and will live in Washington. We'll be back in the fall, but in the meantime send us some news of yourselves so that there will be something to print. — H. Garrett Wright, *General Secretary*, 1040 Lombard Street, San Francisco 9, Calif. Thomas F. Creamer, *Assistant Secretary*, 2032 Belmont Road, Northwest, Washington, D.C.

1941

Buchanan Loesch has just added ensign to his title and is located out in Colorado. Ernest Little, when last heard of, had received his captaincy and was stationed at an overseas replacement depot in North Carolina. M. Richardson is still with the Chicago Quartermaster Corps subsistence laboratories. We bumped into Mert at the Office of the Quartermaster General the other day and at the same time had a discussion with Rogers Finch, who is doing research work out of Jeffersonville. Don Thompson is at Tufts College. We looked for Bill Walsh upon our return to Philadelphia, but Bill has left the Cramp shipyards and is, we understand, at the Fall River yards. His address is Weymouth 88, Mass. Victor Wolf, whom we met in New Orleans on New Year's Eve a year ago, is now with the Air Forces in Alabama. Jim Brown has added lieutenant commander to his name and is down Florida way. Fred Cole has received his majority. Kenneth Davis, II, a lieutenant, has been recently listed by DMB as a prisoner of war, as of last fall. Art Fletcher is sporting a silver leaf and is with the administrative squadron of the Army Air Base at Pueblo, Colo. Among the Washington representatives of our Class are: Ed Bishop, an Army lieutenant, Frank Springer, a lieutenant commander, Ed Kispert, an ensign, and William J. Harris, a Navy lieutenant. Erling Hustvedt and Harlan McClure, both lieutenants in the Navy, are A.P.O.-ing out of New York.

Talking about promotions, here they are: Lieutenant John B. Aaron, Captain Robert Alfred, Major José Andino, Major John Atkins, Jr., Captain Henry Avery, Captain Bruce Beard, Major Everett Cartwright, Dr. Hwei Chang, Lieutenant Ivor Collins, Jr., Lieutenant Ben Duffy, Major Raymond Fairbrother, Captain William Forberth, Jr., Major Avery Gage, Major Cullie Harris, Lieutenant James Holley, Lieutenant Norman Karasick, Captain Walter Keith, Lieutenant Joseph Kleiman, Lieutenant Commander Falkland Lansdowne, Major Kirke Marsh, Jr., Colonel Alejandro Melchor, Lieutenant Edward Miller, Jr., Commander Gilbert Mitchell, Lieutenant Robert Montana, Major Charles Pratt, Jr., Major John Remick, Lieutenant Benjamin Scott, Jr., Lieutenant Commander Howard Senif, Major Edward Sheridan, Commander Harry Sosnoski, Major Kenneth Spengler, Captain Stanley Tirrell, Captain Harry Wasserman.

We have not been successful in getting together with Warren Meyers, since we met him at the station in Washington a few months back. But here is a short note from him: "Sorry I couldn't manage to see you when you wrote. I was in Michigan on leave, which was as welcome as unexpected. Amazing as it may seem, on the diving float at Ludington, Mich., I met Bill Cadogan, who was on leave from Detroit with his wife. He sees Tirrell and Bob Meier, off and on. We had a few nice days running around the Michigan dunes. I met some friends of Mengel's here in New Jersey and heard he was in Pearl two months ago and getting fat." — Stanley Backer, *General Secretary*, Philadelphia Quartermaster Depot, 2800 South 20th Street, Philadelphia 45, Pa. Johan M. Andersen, *Assistant Secretary*, 12 Ware Street, Cambridge 38, Mass.

1942

News from the Charleston Chapter of the Class is mostly concerning the wedding of Dan Hulett to Sara Eschan early in April. Harry Knox, Ed Yoder, Mal Anderson, and John Collins were all officials at the wedding. Shortly before or after the wedding, I can't remember which, Harry Knox showed up at the junior prom, which was held as usual in the Statler. At that time he seemed to be preoccupied, evidently chasing after some "femme fatale." Wendell Phillips betook himself a better half, as of April 2, in the person of Janet Cooper of Walden, N.Y. The bridegroom is now with the engineering department of the Federal Telephone and Radio Corporation in Newark. Also, there is now a Mrs. Jack Schultz. She is the former Lois Parks of Schenectady. Evidently the General Electric isn't the only place that Jack has been hanging out for the last few years. Harold Stetson, a lieutenant in the Army Air Forces, and Elizabeth Abbott were married last January. At the present time they may be reached in Atlanta, Ga., where Harold has been an instructor at the Bainbridge, Ga., Air Base.

At last the babies are beginning to break into the column. Bob McBride is, at present, passing out his second round of cigars in honor of the latest arrival, a baby girl named Timothy Ann. The Akbar Brinsmades also announce a new addition to the family in the person of Anne Hudson, as of March 12. Something tells me that at a very near date we shall need a new column in which to report the new arrivals of our Class.

And so on to the engagements. Ed Pepper is now engaged to Natalie McKenzie. To judge from her picture, she is a very nice-looking blonde. Likewise, Jim McClelland and Pamela Turner have announced intentions. Bob Curtis and Eleanor Johnson are planning to walk down the aisle in the early fall. Last, but by far the least, we see that the one and only Hawk Shaw is engaged to Laura Higgins of Brookline. In fact, by the time this gets into print he should be married. I wonder if we shouldn't give the future Mrs. Shaw a few hot tips on the hawk?

News of the boys around the world is beginning to drift in a little at a time. We find that Dan Schaeffer has been promoted to the rank of captain and is, at present, serving as an American liaison officer in the Chinese Combat Command. The Chinese Combat Command is engaged primarily in the planning and executing of tactical operations, training, distribution, and assignment of American equipment and supplies for Chinese military units. Albert Downing, now a major, has been awarded the Oak Leaf Cluster in lieu of a second Bronze Star for meritorious service in connection with military operations against the enemy in the Japanese theater of war. As a result of Major Downing's efforts, vital weather information was available at all times to tactical aircraft and was of inestimable value in operations against the enemy. Dave Cavanaugh is now a lieutenant in the Navy Seabees, having spent about two years overseas with a naval Construction Battalion. To date he has earned one Presidential Unit Citation and two battle stars. In addition to that, his name should be added to the list of married men in the Class. Shortly after returning from his overseas duty, he and the former Virginia Holt of Saco, Maine, were wedded. To the best of our knowledge, he is at present stationed at the Naval Ordnance Test Station in Inyokern, Calif. The further news comes in that Frank Herlihy, an Army captain, has been slightly injured in action in Luxembourg and was hospitalized for a brief period. Let's all hope that Frank is up and at 'em again by this time. Captain Howard Plant has been awarded the Bronze Star for meritorious service in connection with military operations against the enemy in south-central China. The boys are really getting around. Evidently Howard has been serving as a staff weather officer of the east China wing, since January of 1944. We also note that he is the father of a baby girl, Anne Katherine, whom he has never seen. Let's wish him a speedy trip home to his family! Bernie Levere is stationed somewhere in Europe as of the first of April. It appears in his V-mail letter that Bernie is a first" looey" with the Labor Supervisor Center overseas.

News comes of Arnold Dach, now a lieutenant in the Army overseas, but the news concerns a plan to service all of Long Island with helicopter taxis. Evidently Dach

and his father are submitting the proposals to the Civil Aeronautics Administration. Not a bad idea — I wish they would install some helicopters around Boston. A long letter just arrived from Warren Kaye, containing a picture of the new captain. The picture was taken shortly after D-day on Leyte, so that Warren has the usual bags-under-the-eye-effect, but otherwise hasn't changed a bit. In fact, I might even suspect him of having gained a few pounds. His letter places him at practically every island in the Pacific at some time during the last two years, and he is now bragging about a baby daughter, Carolyn. What's the matter with this Class — all baby girls so far. That's not being very productive from the standpoint of the Institute. A recent communiqué from Carl Jealous reports him to be enjoying southern hospitality in Oak Ridge, Tenn. It's about time some of these New Englanders found out about some real southern hospitality. He is also married to the former Mamie Killion of Tennessee. They are at present keeping house at 341 West Outer Drive, Oak Ridge, Tenn.

Finally, we have some very sad news, the first of which is that Wallace B. Caufield, Jr., was mortally wounded in the European theater on December 30 and died in a hospital near Paris on the 31st. During the war he had served as a specialist for both the Army and the Navy — now working in uniform and again with the civilian heads of the several allied governments. At the very time of his death from being hit by a shell in the Luxembourg area, it is to be presumed, without violating censorship, that he was there devising means of combating the robot bomb by radar or otherwise by the sciences in which he was so expert. While Wallace Caufield was a transfer student coming from Stanford to Technology, I think that many of us will remember him as a graduate when we were here as undergraduates. Friends of the Columbia Broadcasting Corporation, the General Radio Company, Technology, and Harvard very promptly set up a memorial scholarship at Stanford University in recognition of his contribution to the country. Probably for most of us it will be even heavier news that our Class Secretary was recently reported to be missing in action in the Pacific theater. As we know, he was a bombardier on a B-29. His father was kind enough to send us a copy of the letter received from his commanding officer. He reports that Wob's ship was last heard of over the target, which was Tokyo. Up to that time Wob had participated in 11 bombing missions over Tokyo in addition to many others over equally important Japanese military targets. Let's all hope and pray that Wob will be found in the not too distant future. I know that most of the members of the Class who knew him at all well will join me in expressing my deepest sympathy and regrets to his parents, at the same time hoping sincerely that his plane managed to make free territory. — Frederick W. Baumann, Jr., *General Secretary*, Orchard Lane, Golf, Ill. S. Young Tyree, Jr., *Assistant Secretary*, Room 2-215, M.I.T., Cambridge 39, Mass.

1943

The sad news has been received that Lisle Van Burgh is missing in action. Lisle is a lieutenant, junior grade, in the Naval Air Service in the Pacific. We extend our deepest sympathy to Lisle's family and many friends.

Because of my recent change in station, little news has caught up with me yet. But I read in the papers that Susanne Elizabeth Walmsley of Brooklyn, N.Y., and William G. Saunders, a lieutenant in the Army Air Forces, were married in that city on April 7. On the same day, but in West Hartford, Conn., Harriet Bolles became Mrs. Edward C. McClaud, Jr. Ed is at present an insulation engineer at Pratt and Whitney Aircraft in West Hartford. And the engagement of Barbara Mandigo and Malcolm Walker, a lieutenant, junior grade, is announced.

John Scott has written us a long letter which I shall quote: "My time and energies have been devoted to mechanical engineering for Western Electric. The draft board has maintained constant touch with me; I have managed, however, to stay out of their clutches in spite of their persistent efforts, which took me to the threshold of the Army before somebody declared me too essential to leave the home front.

"Shortly after I was married, in August, 1943, Frank Clauson stopped off for one night on his way to Texas, but he has since moved to Long Beach, Calif., where he is working for the Texas oil company. At about the same time I spent a few hours with Bill Selke, a lieutenant, junior grade, who is now in the Pacific with a Motor Torpedo Boat squadron. He says that he has seen Jim Reswick, who has been in the Pacific about eight months. He also says that Bedrich Hettich is on Leyte with a finance company. In the spring of 1944 I ran into Bill Franklin at Ford's Theatre in Baltimore. Bill and Bob Richmond are with Standard Oil. Bill is in their New Jersey labs, and Bob was first engineer of their Baltimore plant. Last July, Larry Stewart dropped in from Norfolk for a week end. For about 18 months he was with the Norfolk Naval Air Station.

"A few weeks ago a letter came from Hans Walz from the Philippines. He has run into Greg Azarian, Bill Inglan, Fred Perry, and Al Bakker. Hans says that he is a squadron S-2. He briefs and interrogates crews, makes out mission reports, and does some other intelligence work. For a few days Jack Reese's wife has been visiting us. Jack, an engineer, first lieutenant, is clearing mine fields in Germany. While they were stationed in Oregon, he practiced booby trap installations in their home, much to his wife's dismay. Denial of the telephone, front door, or even the living room were frequent. Some fun!"

Well, good luck and cheerio until the November Review! But in the meantime, do not be too surprised if you receive an answer from me to many of your unanswered letters. — Clinton C. Kemp, *General Secretary*, Barrington Court, 988 Memorial Drive, Cambridge 38, Mass.

1945 (10-44)

We have been notified that John F. Burke was killed in action on Iwo Jima on March 4. Johnny, who was a lieutenant in the Marines, had been class president during our sophomore year. Also reported was the death of William E. Nightingale, who was a crew member of an R.C.A.F. Lancaster bomber which crashed in Lunéville, France, on March 8. Bill had joined the Royal Canadian Air Force in November, 1942.

Two more of our Class have taken the fateful step. John Woolston, an ensign, was married in Philadelphia on April 7 to the former Evelyn Franz, who attended Emerson College. Gerry Swensson chaperoned the occasion as best man. The Woolstons stopped in Boston for a while before leaving for the West Coast, where Wooly is now on active duty. The former Virginia Cox became Mrs. W. Keith Barker in April. Her husband is a graduate of McGill.

Richard Knight is a navigator of an Eighth Air Force B-17 Flying Fortress and took part in bombing transportation facilities near Berlin. He had entered the Army Air Forces in July, 1942, and received his wings at Coral Gables, Fla., in September, 1944. Five of the boys who survived the Prairie State indoctrination course have returned to the Institute for a while. Charlie Arnold, Walter Gray, Harry McCurdy, Al Van Rennes, and Johnny Granlund, all ensigns, are now at radar school in downtown Boston, the last two sporting their recently acquired wives. — James S. Mulholland, Jr., *General Secretary*, 1172 77th Street, Brooklyn, N.Y. *Assistant Secretaries:* Roderick L. Harris, 1 Winchester Street, Brookline 46, Mass.; James B. Angell, 530 Beacon Street, Boston 15, Mass.

The Review is not published during the summer months following July. This issue, therefore, concludes Volume 47. Number 1 of Volume 48 will be published on October 27 and dated November.

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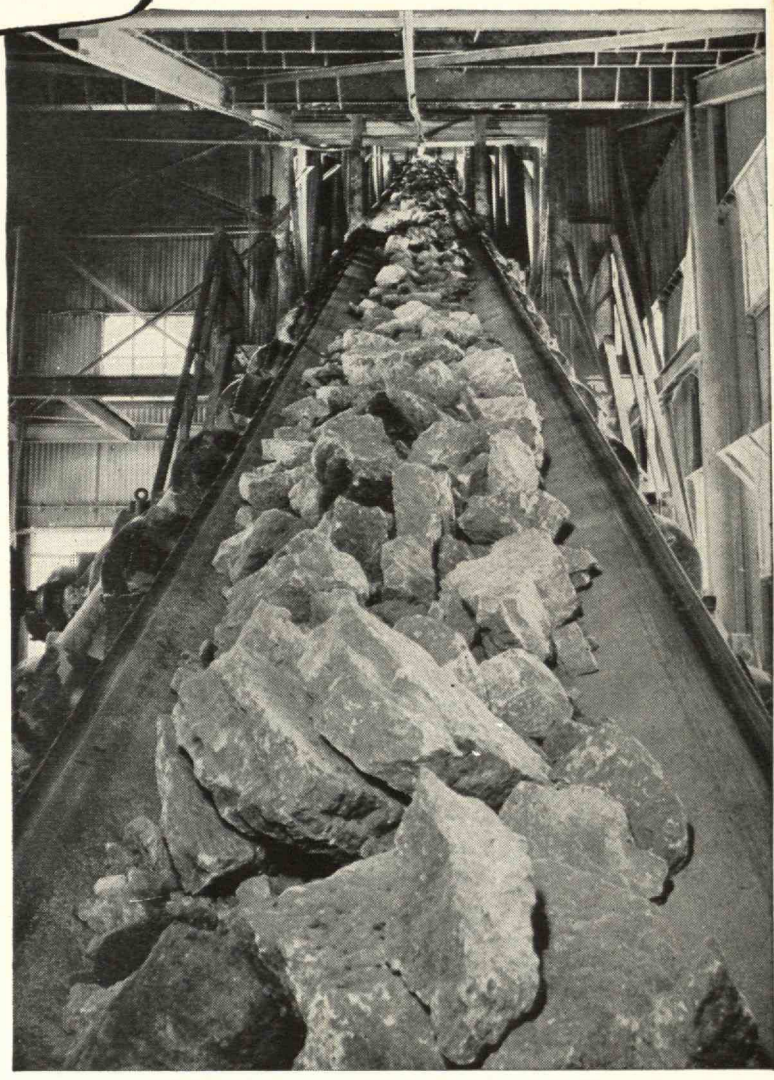
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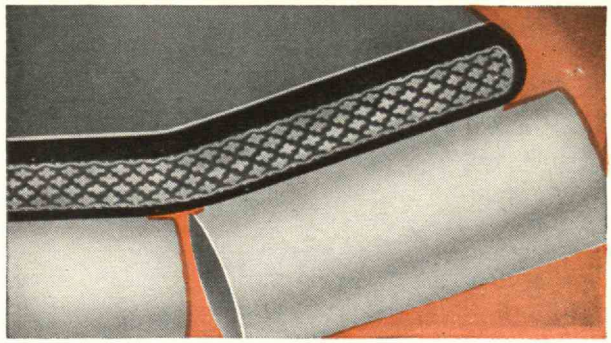
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